SKIAGRAPHIC ATLAS

OF

FRACTURES AND DISLOCATIONS.

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SKIAGRAPHIC ATLAS

OF

FRACTURES AND DISLOCATIONS

WITH

NOTES ON TREATMENT FOR THE USE OF STUDENTS.

BY

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THE plates in this Atlas have accumulated gradually in connection with my work on X Ray Photography at the Western Infirmary.

It has been suggested that they might prove useful to Students if published in book form, and it is to be hoped that the brief descriptive notes will be of service for the better interpretation of the plates.

I have to thank Dr. G. H. Edington for his assistance in revising the proof sheets and adding the notes on treatment.

D. J. MACKINTOSH.

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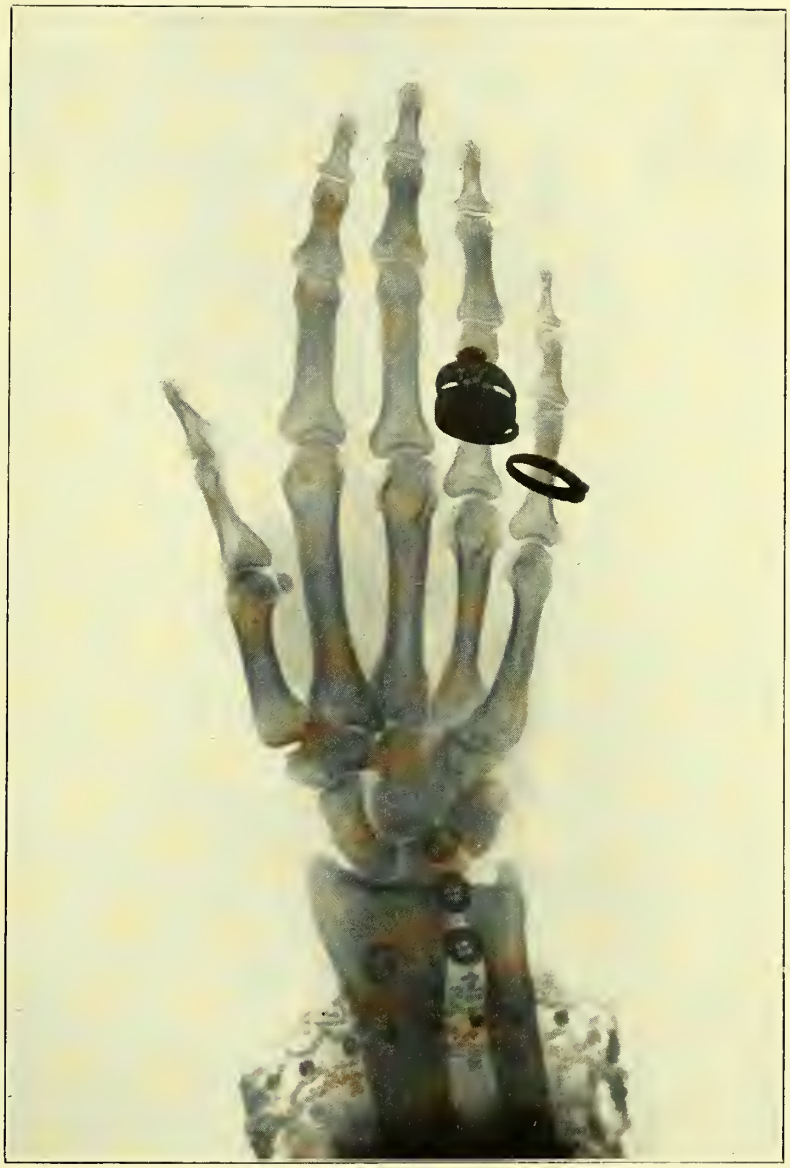
SKIAGRAM OF A NORMAL HAND TAKEN THROUGH A GLOVE.

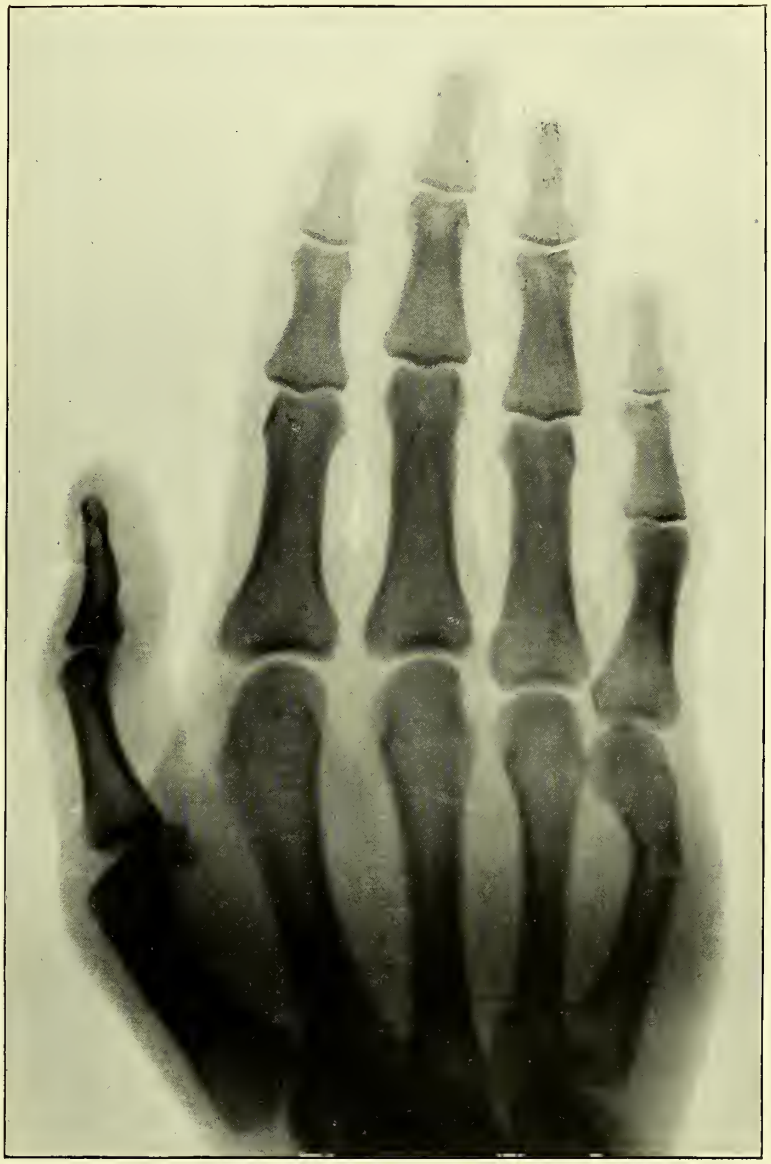
This plate is introduced for purposes of comparison with the illustrations of fractures which follow.



TRANSVERSE FRACTURE OF FIFTH METACARPAL BONE.

The fracture was the result of a blow from a cricket ball.

Treatment,—Flex the fingers over a roller bandage in the palm of the hand, and fix in this position.



FRACTURE OF LOWER END OF RADIUS; COLLES' FRACTURE.

FREQUENTLY caused by a fall on the palm of the hand.

The skiagram shows an oblique fracture with the lower end of the Radius carried to the Radial side of the forearm, and the Styloid process of the Ulna detached and out of view.

Treatment of Colles' Fracture.—Reduce at once by traction towards the ulnar side applied to the hand, and accompany this by direct manipulation of the fragments. It may be necessary to employ traction over the knee of the operator, and, if required, an anæsthetic must be administered.

There is little tendency for the displacement to recur, but the part should be put up on an anterior junk splint extending from below the internal condyle of the humerus to the heads of the metacarpal bones. The splint must be cut away to leave the thenar eminence uncovered, and so avoid pressure-atrophy of the thumb-muscles. The sling is applied to the fore-arm and does not include the hand, thus providing ulnar traction.

Begin passive movement of the fingers at once, and of the wrist after the first week, when the splint may be sufficiently shortened to allow of this. The splint should be left off in three weeks' time.

Note.—If not reduced a weak hand results, the thumb becoming almost useless, and the part subject to "rheumatic" pains.

COLLES' FRACTURE.

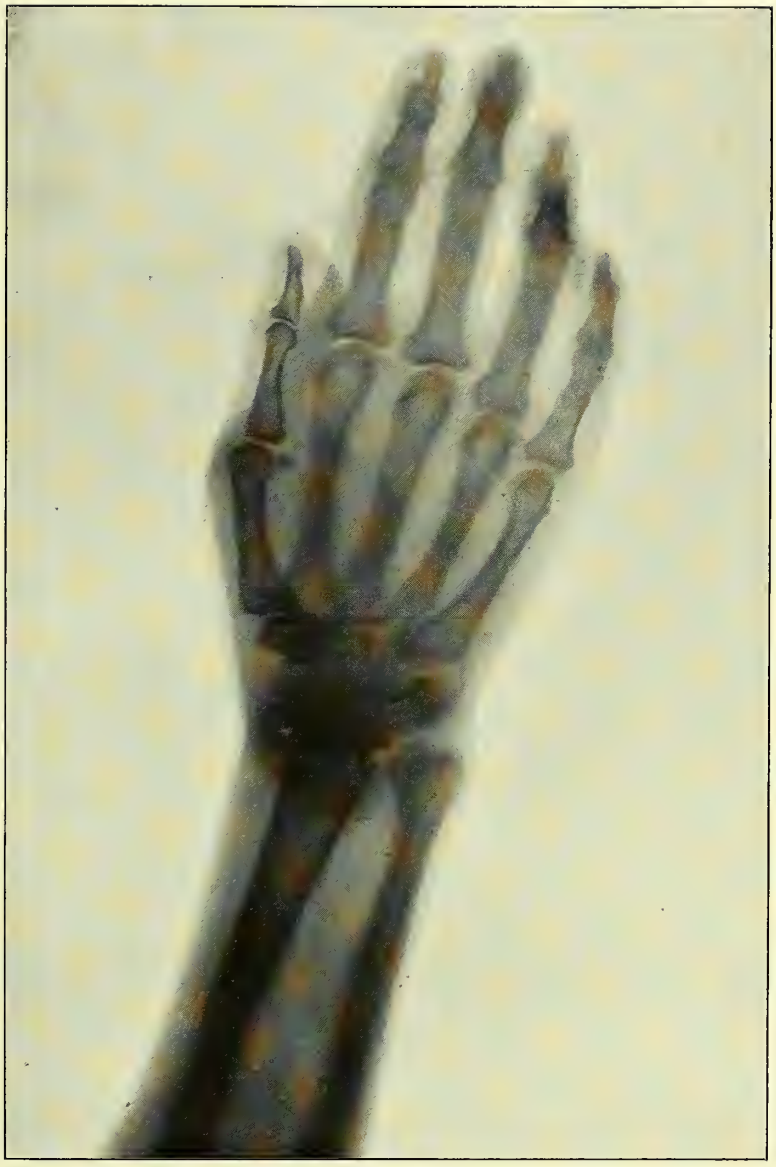
THERE is well marked displacement of the Radius as in the previous case, and the styloid process of the Ulna is detached and displaced in front of the Carpal bones.

COLLES' FRACTURE.

The skiagram shows an impacted fracture of the Radius with detachment of the Ulnar Styloid process.

COLLES' FRACTURE.

The skiagram shows well the over-lapping of the radial fragments, with detachment of the styloid process of the ulna.



COLLES' FRACTURE.

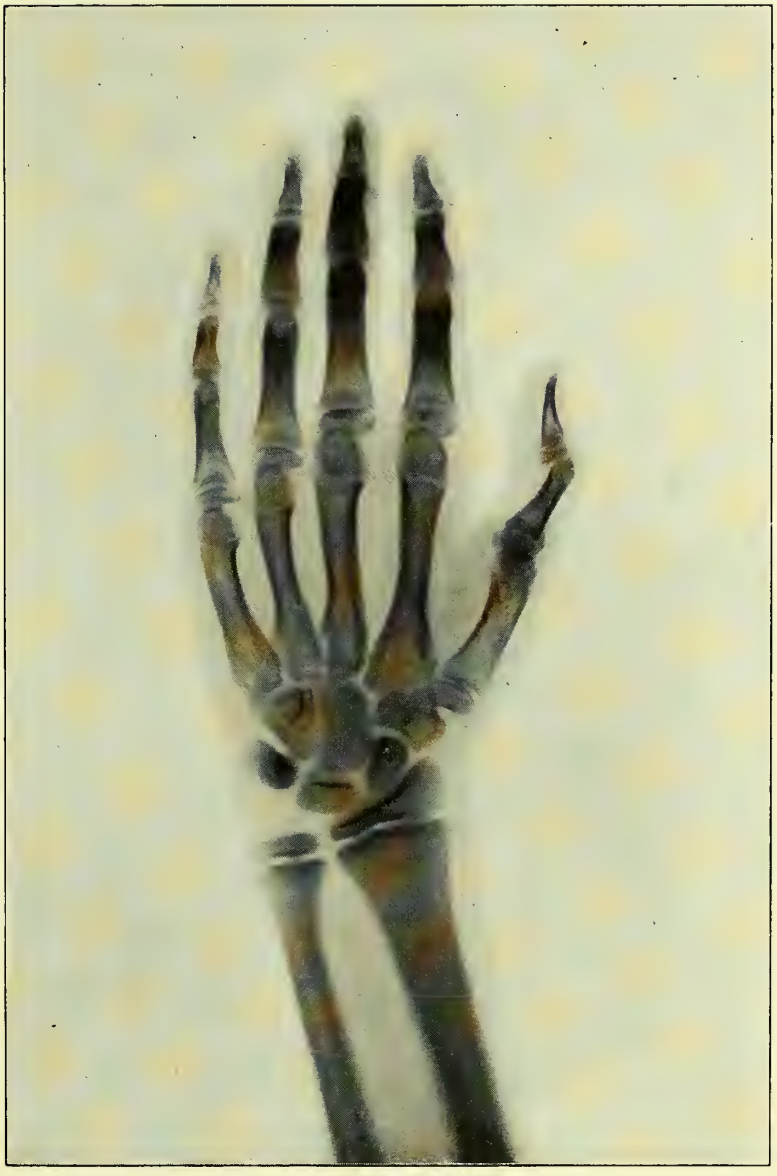
SKIAGRAM shows slight displacement of the Radius, with the Styloid process of the Ulna detached.

COLLES' FRACTURE.

SKIAGRAM shows an impacted Colles' fracture, the Styloid process of the Ulna remaining attached. In this case the usual signs were not well marked, but there was distinct tenderness over the seat of fracture.

DISLOCATION OF PHALANGES.

SKIAGRAM of the hand taken three months after injury, showing dislocation of the phalanges of the thumb in a boy of 10 years.



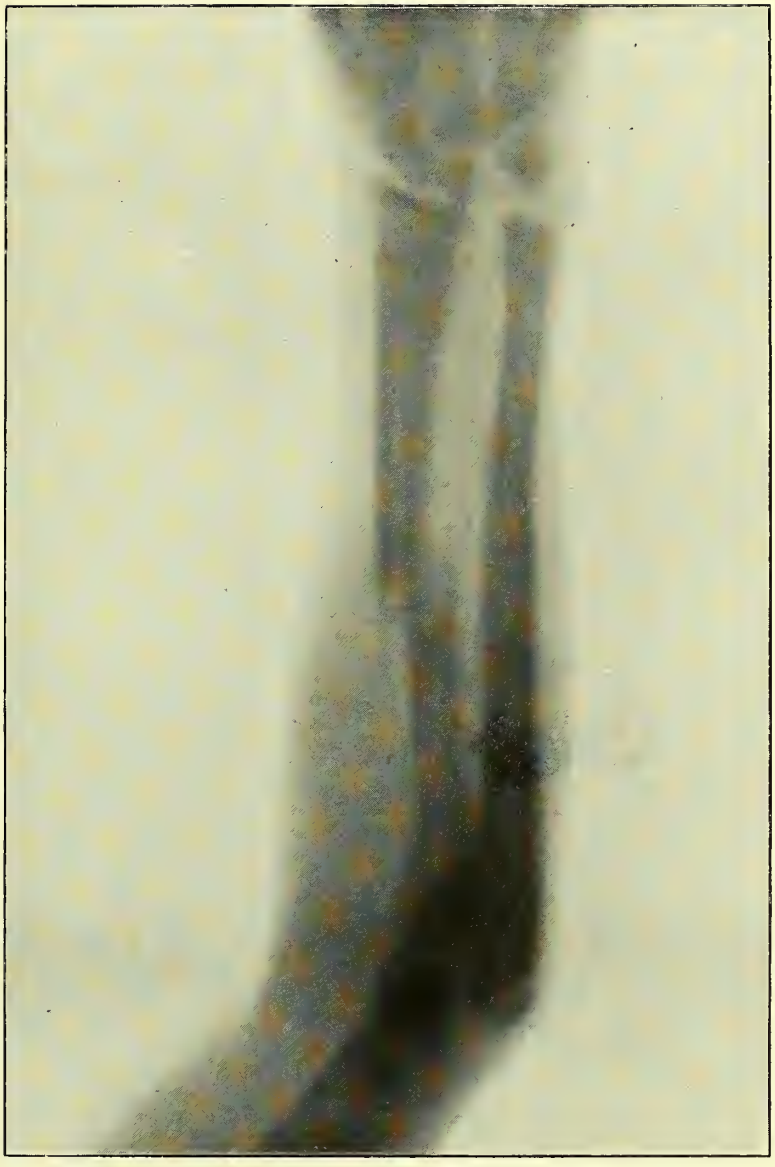
FRACTURE OF BOTH BONES OF THE FOREARM IN A CHILD.

The Ulna is slightly bent, a little below the level of the seat of fracture of the Radius ("greenstick" fracture).

The upper fragment of the Radius is displaced towards the Ulna by the action of the pronator teres and supinator brevis muscles.

Treatment.—Place forearm in position midway between pronation and supination. Apply anterior and posterior straight splints extending from below humeral condyle to the wrist and knuckles respectively. These splints should be broad enough to prevent the bandage pressing on the bones. Sling whole length of forearm.

Movements of the fingers are to be encouraged from the first, and of the wrist when posterior splint is shortened, which should be in from 2-3 weeks.



FRACTURE OF BOTH BONES OF THE FOREARM IN A CHILD.

TREATMENT as on page 10.

NORMAL ARM.

SKIAGRAM showing the bones of a normal arm, introduced for purposes of comparison.

FRACTURE OF BOTH BONES OF THE FORE-ARM IN A YOUNG SUBJECT.

The skiagram, which was taken three months after the injury, shows that a fracture of both Radius and Ulna had occurred about the middle of the respective shafts. It is not possible to state whether the fracture had been complete or of the "greenstick" variety.

OLD GREENSTICK FRACTURE OF THE RADIUS. (ANTERIOR VIEW.)

The patient was eight years of age, and had received an injury to the fore-arm four years previously, but no deformity was observed till three months after the injury. Movements of pronation and supination were impaired.

Treatment.—Osteotomy and straightening the bone. Partial resection may be required.

OLD GREENSTICK FRACTURE OF THE RADIUS.
(POSTERIOR VIEW.)

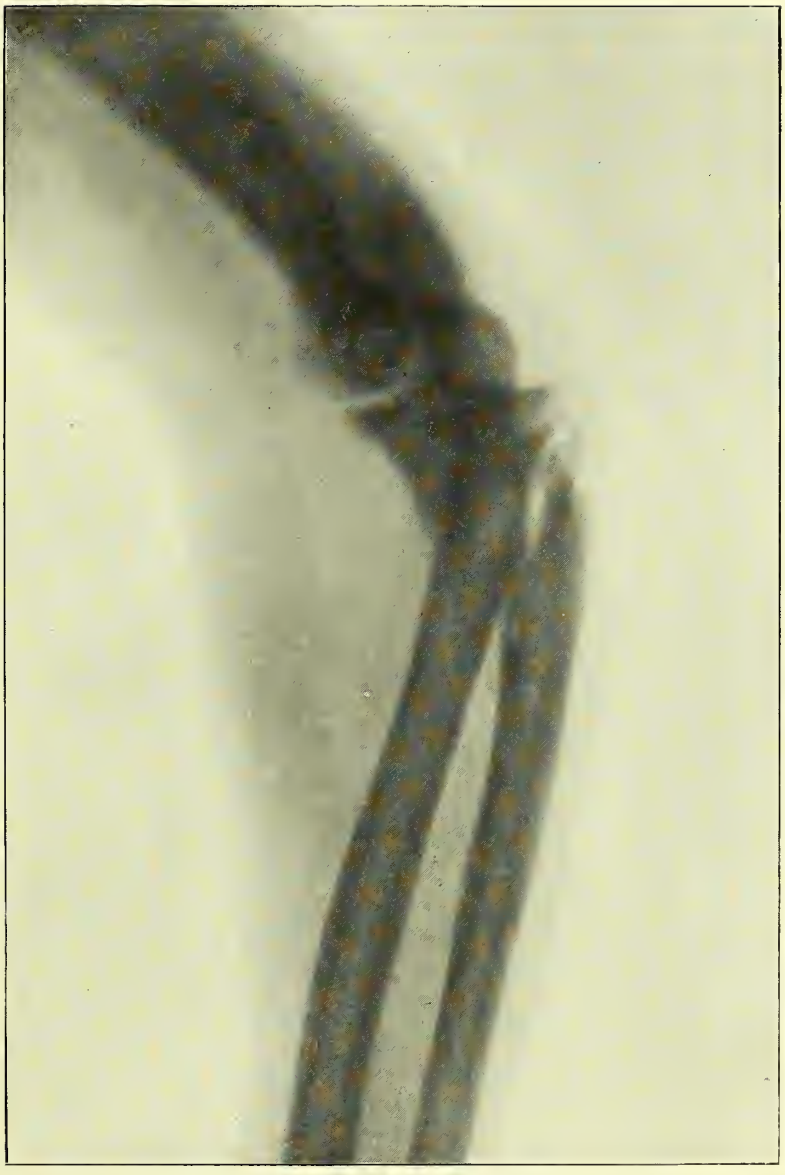
LONGITUDINAL FRACTURE OF THE UPPER END OF THE ULNA.

The skiagram shows the coronoid process and upper end of the shaft of the Ulna broken off.

Treatment.—Apply anterior and posterior rectangular splints, the anterior to be well padded. Sling the whole fore-arm. Splints to be left off in 3-4 weeks, after which passive movements may be employed.

OBLIQUE FRACTURE THROUGH THE UPPER ENDS OF BOTH RADIUS AND ULNA.

TREATMENT as on page 16.



FRACTURE OF THE OLECRANON PROCESS.

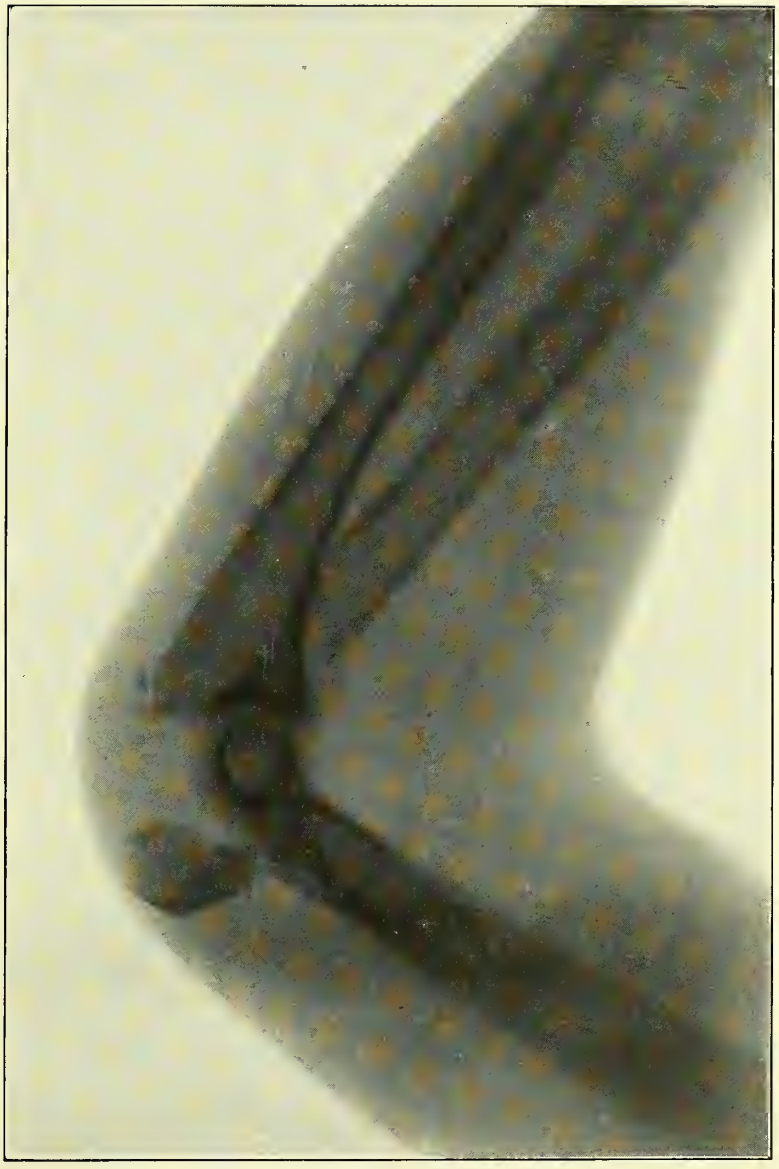
This fracture is frequently produced by a fall or a blow on the elbow with the arm bent. It is said to be sometimes produced by violent action of the triceps muscle.

The skiagram, which was taken immediately after the accident, shows the characteristic deformity. The arm is semi-flexed, and the hollow between the fragments can be felt. The upper fragment is quite movable, especially upwards and downwards, and when drawn downwards, crepitus is obtained.

Treatment.—There are two methods of treating fracture of the olecranon. The first of these is briefly as follows :—Aspirate the elbow joint if there be much effusion ; this favours the approximation of the fragments. Place the limb in the position of slight flexion, and then drawing down the fragment fix it in position by strapping. Apply a straight splint to the front of the limb, extending from the front of the shoulder to the bases of the fingers, and thickly padded at the elbow.

The second method makes sure of accurate apposition of fragments with resulting bony union. The fragments should be drilled and wired, access to the parts being obtained by raising a flap. Should much bruising have occurred these measures had better be postponed for a week or ten days, the limb being meanwhile fixed in the position of semi-flexion.

N.B.—Method number two should be employed only where suitable antiseptic precautions can be taken.



FRACTURE OF THE OLECRANON PROCESS.

The skiagram was taken two years after the accident. Complete fibrous union had taken place, and the arm was as useful as its fellow.

This skiagram illustrates the fact that the X Rays pass freely through fibrous tissue, and what appears in the plate as a space between the fragments is really filled up by fibrous tissue.

Treatment.—In a case such as this no interference is called for.

FRACTURE OF THE OLECRANON PROCESS.

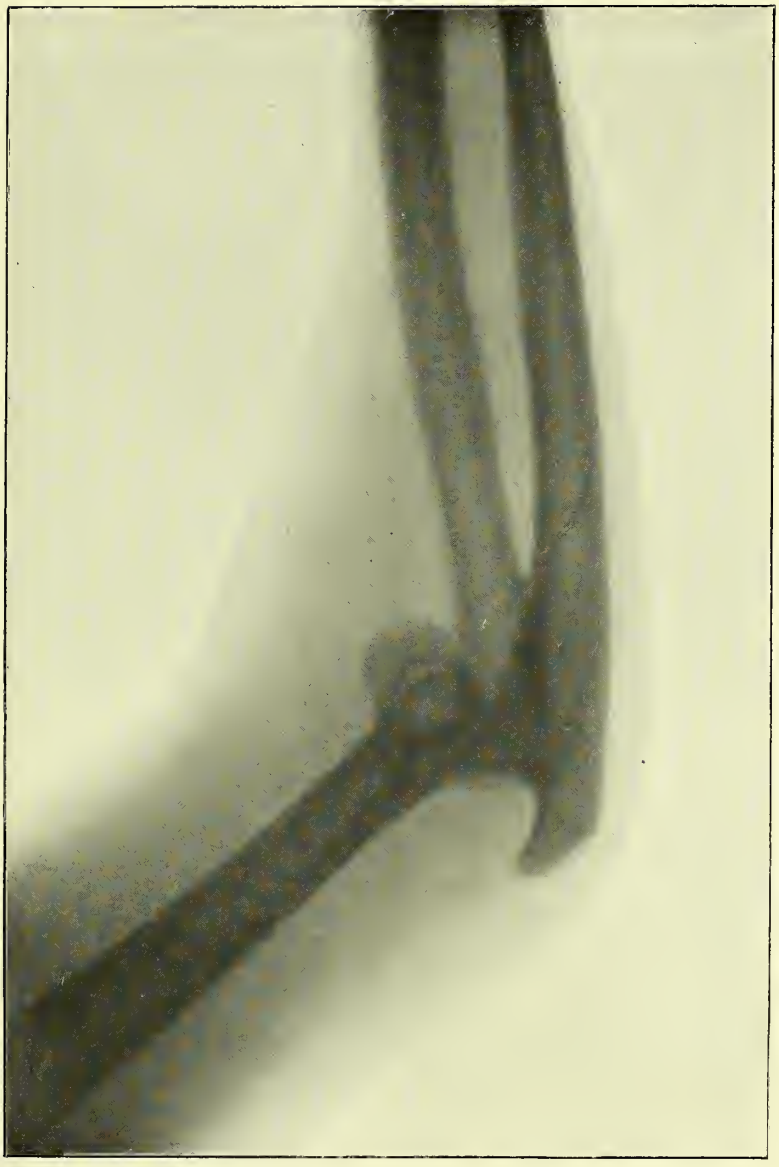
The fragments in this case are not widely separated.

Treatment.—Method number one (*vide* page 18) would be suitable here.

DISLOCATION AT THE ELBOW.

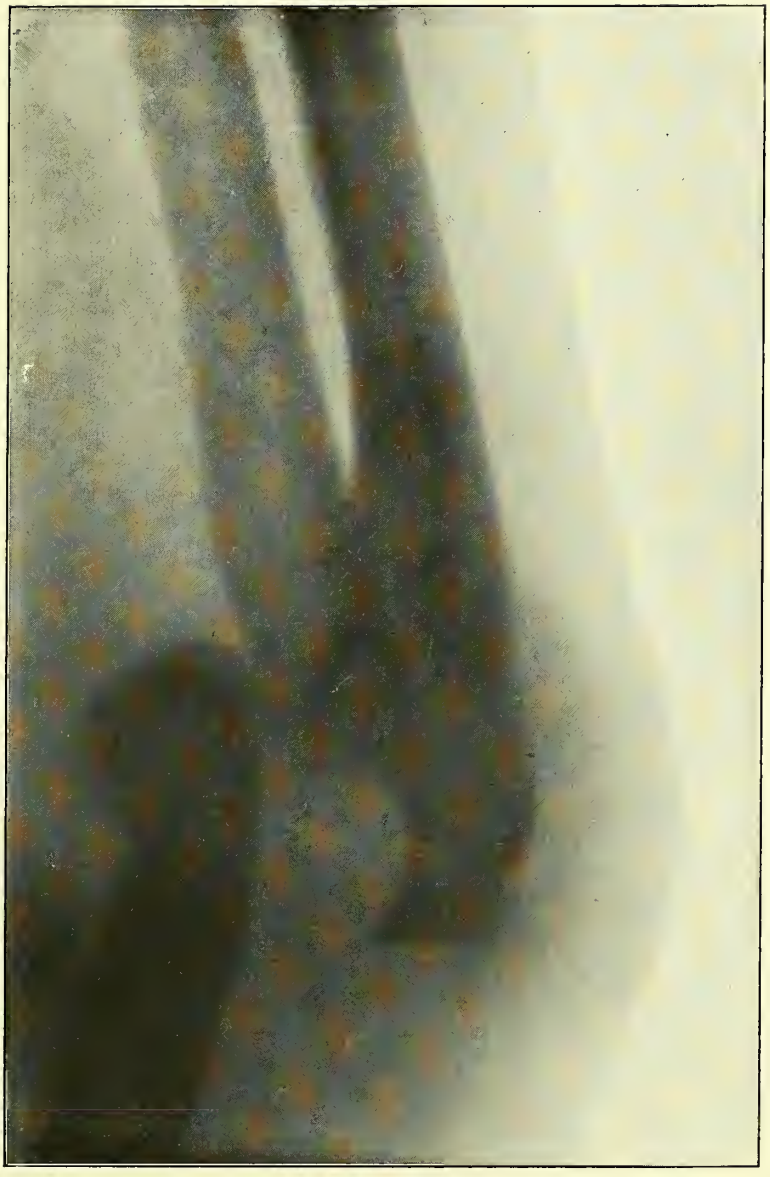
The skiagram shows a dislocation backwards of both bones of the fore-arm. The olecranon projects very prominently behind, and on a higher level than the condyles ; the head of the Radius can also be seen behind the condyles. The lower end of the Humerus projects in front, and the antero-posterior diameter of the joint is markedly increased.

Treatment.—Flexion over the operator's knee, which is pressed downwards on the upper part of the fore-arm to disengage the coronoid process from the end of the Humerus ; apply a posterior rectangular splint. Passive movement and massage are to be employed on removal of splint, which may be at the end of a fortnight.



POSTERIOR DISLOCATION AT BOTH FORE-ARM BONES AT ELBOW.

COMPARE with No. 21.



LATERAL DISLOCATION AT THE ELBOW JOINT (RIGHT).

THE skiagram was taken with the arm extended, and gives a view of the joint from behind.

In this case the internal condyle is fractured and the head of the Radius can be felt displaced to the outer side of the Humerus.

Treatment. — Reduce the dislocation. Apply rectangular splint. Commence passive movements at the end of a week. Leave off splint in 14 days. A case of this kind may result in a stiff elbow requiring subsequent excision.

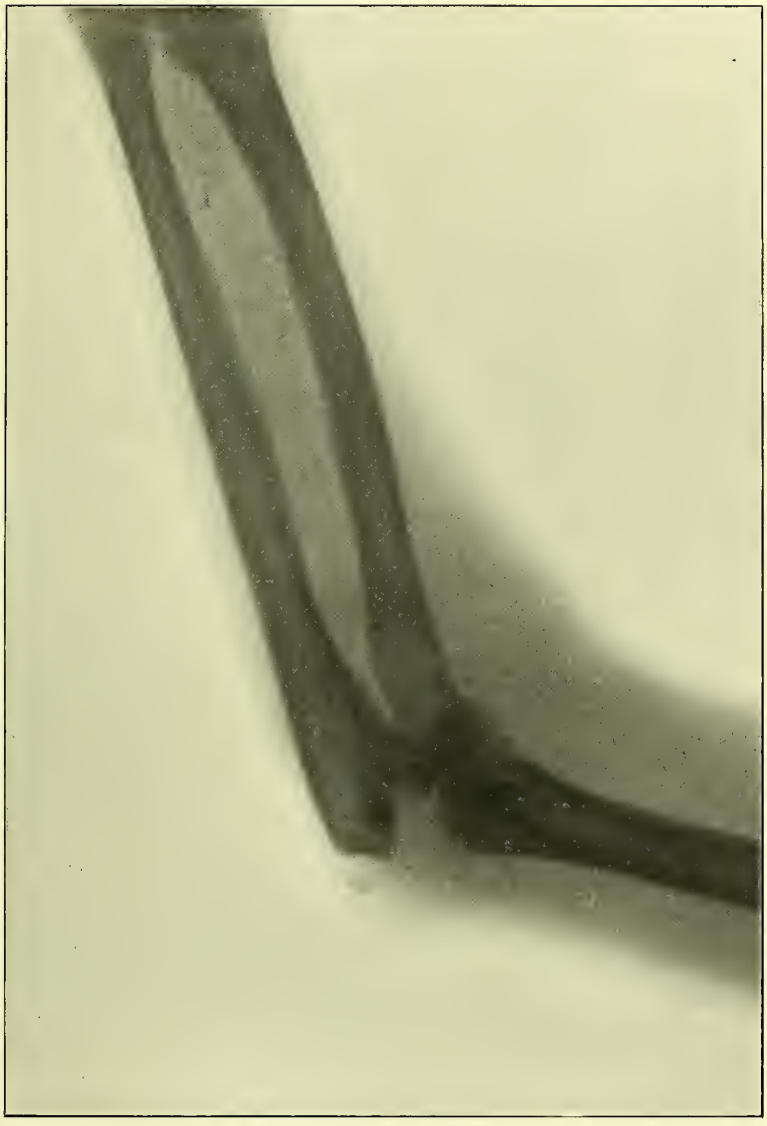
LATERAL DISLOCATION AT THE ELBOW JOINT IN A CHILD.

This skiagram was taken with the elbow flexed, and shows the ulna riding on the capitellum and the head of the Radius free. Centres of ossification for the olecranon and the internal epicondyle are well seen.

DISLOCATION AT THE ELBOW, WITH SEPARATION OF EPIPHYSIS.

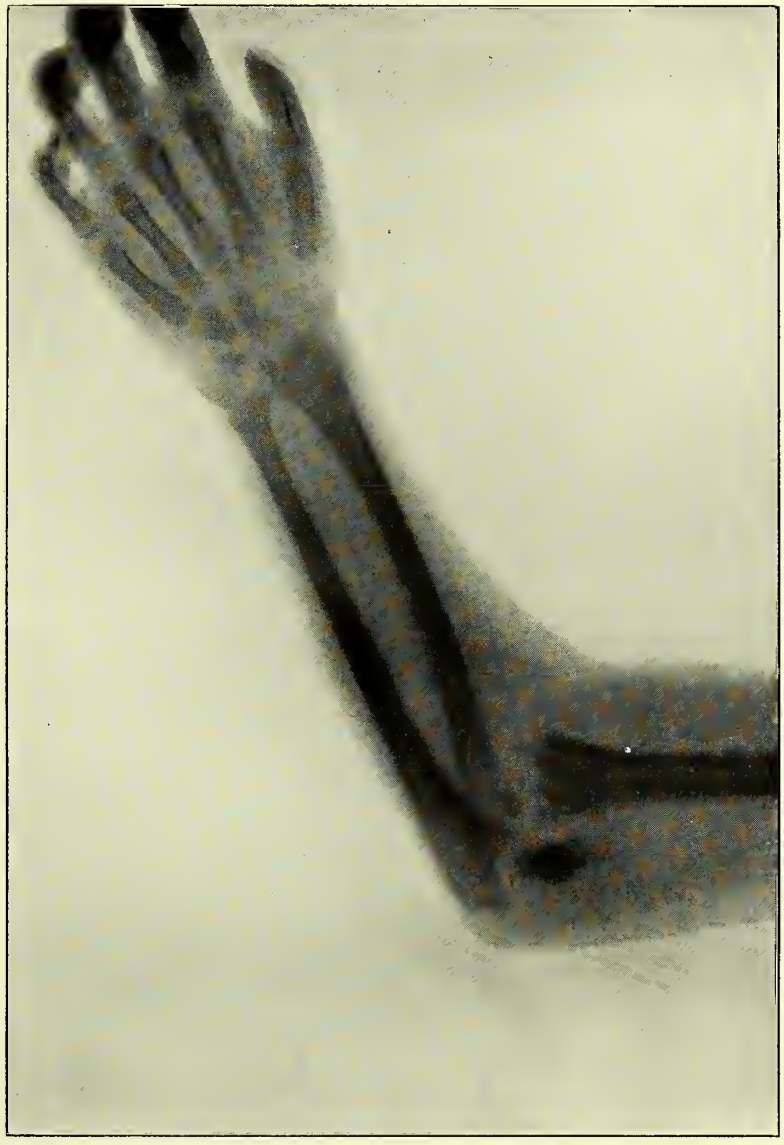
The skiagram shows a dislocation backwards of the fore-arm bones, with displacement forwards of the separated humeral epiphysis.

Treatment.—Try to manipulate the parts into position, and if successful put up the arm in the position thus obtained, probably one of flexion to a right angle. It may be necessary to open the joint and wire the epiphysis to the shaft.



SEPARATION OF THE LOWER EPIPHYSIS OF THE HUMERUS IN A CHILD.

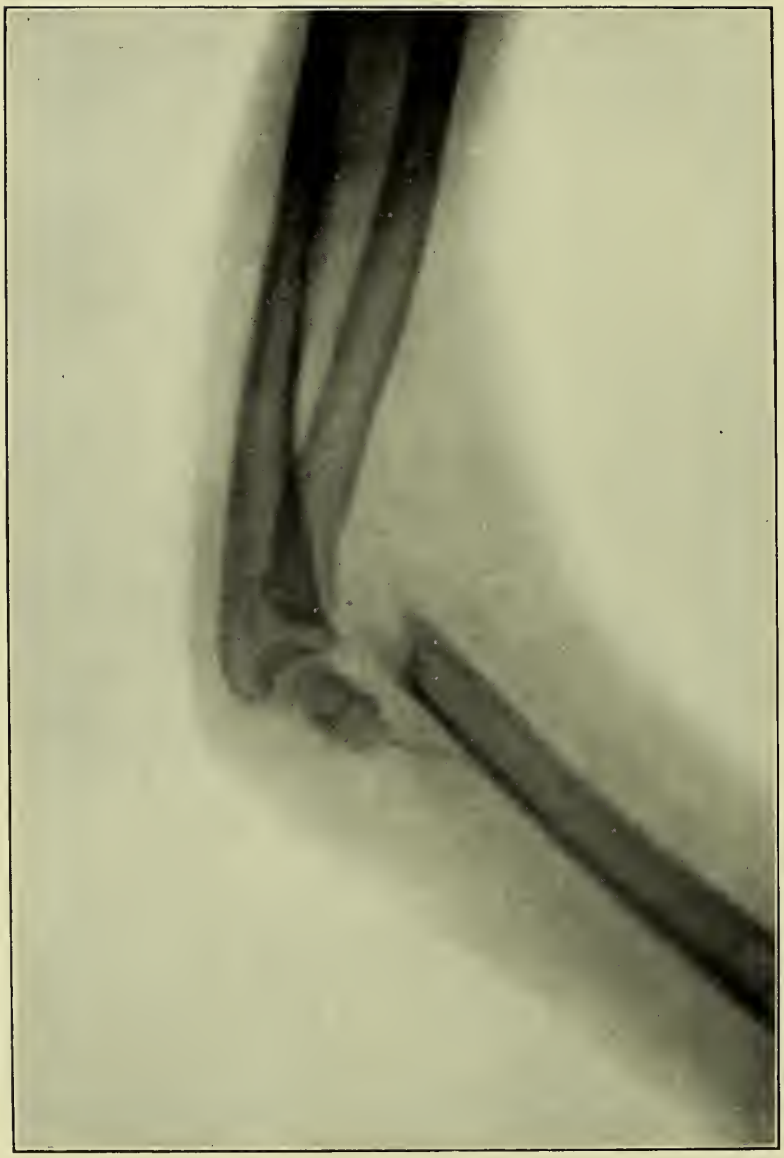
The Epiphysis is displaced backwards, and is accompanied by the fore-arm bones, which thus preserve their normal relations to the condyles.



DISLOCATION AT THE ELBOW, WITH FRACTURE OF HUMERAL CONDYLE, IN A CHILD.

Skiagram shows a dislocation outwards of fore-arm bones, with fracture of external condyle of humerus.

Treatment.—Manipulate into position ; rectangular splint for 10-14 days. Passive movement and massage.



FRACTURE OF THE LOWER END OF THE HUMERUS.

The skiagram shows fracture above the condyles with displacement backwards of the lower fragment along with the fore-arm bones.

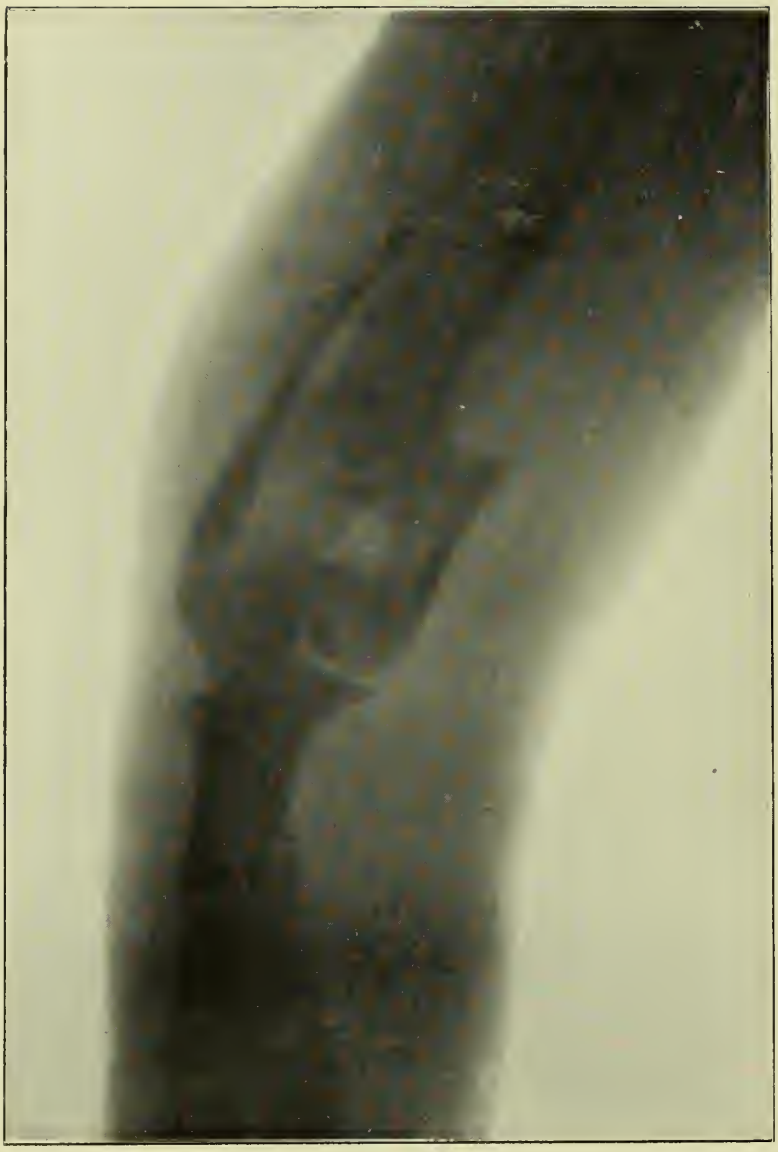
FRACTURE OF THE LOWER END OF THE HUMERUS IN A CHILD.

THE lower end of the upper fragment projects in front of the joint, and the fore-arm is shortened.

This is apt to be mistaken for dislocation of the fore-arm bones backwards, but the olecranon preserves its normal relation to the humeral condyles. With the aid of a skiagram, the condition can be easily made out.

Treatment (See page 31).—Splints may be left off in 3 weeks.

FRACTURE OF LOWER END OF HUMERUS.

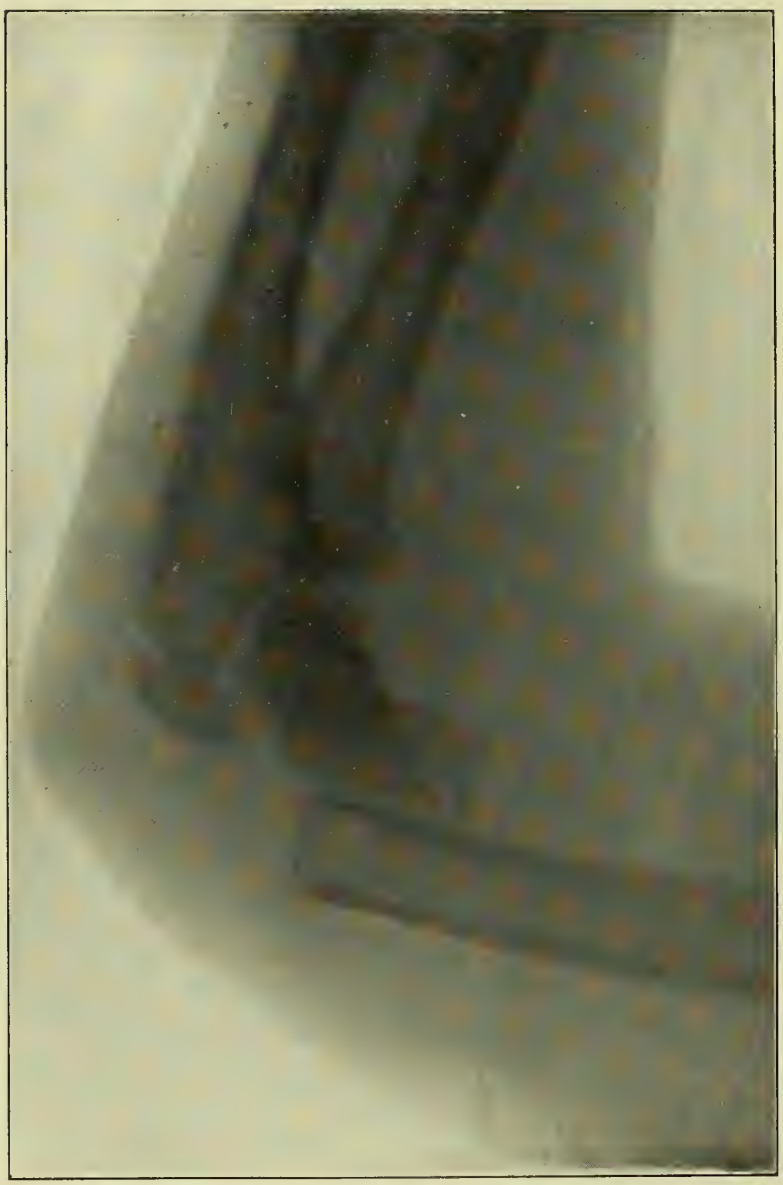


FRACTURE OF THE LOWER END OF THE HUMERUS (LEFT).

Skiagram shows the condyles split, viewed from behind.

Treatment.—Reduce, and apply a rectangular splint (internal or external). If displacement recur, wire or peg fragments.

As in all elbow-injuries, early passive movement is of importance to obviate stiffness of the joint. In a case like the present begin movement some time in the second week. The splints are to be left off in 3-4 weeks.



FRACTURE OF THE LOWER END OF THE HUMERUS, WITH FRACTURE OF THE OLECRANON.

The skiagram shows an oblique fracture of the lower end of the humerus with forward displacement of the lower fragment. The Olecranon is also fractured, but only slightly displaced.

Treatment.—Reduce by extension on the forearm and hand, or by pulling on the flexed limb at the bend of the elbow. Fix the limb in a posterior rectangular gutter splint made of metal or plaster. In some cases an anterior rectangular splint will be required in addition.

OBLIQUE FRACTURE OF THE SHAFT OF THE HUMERUS.

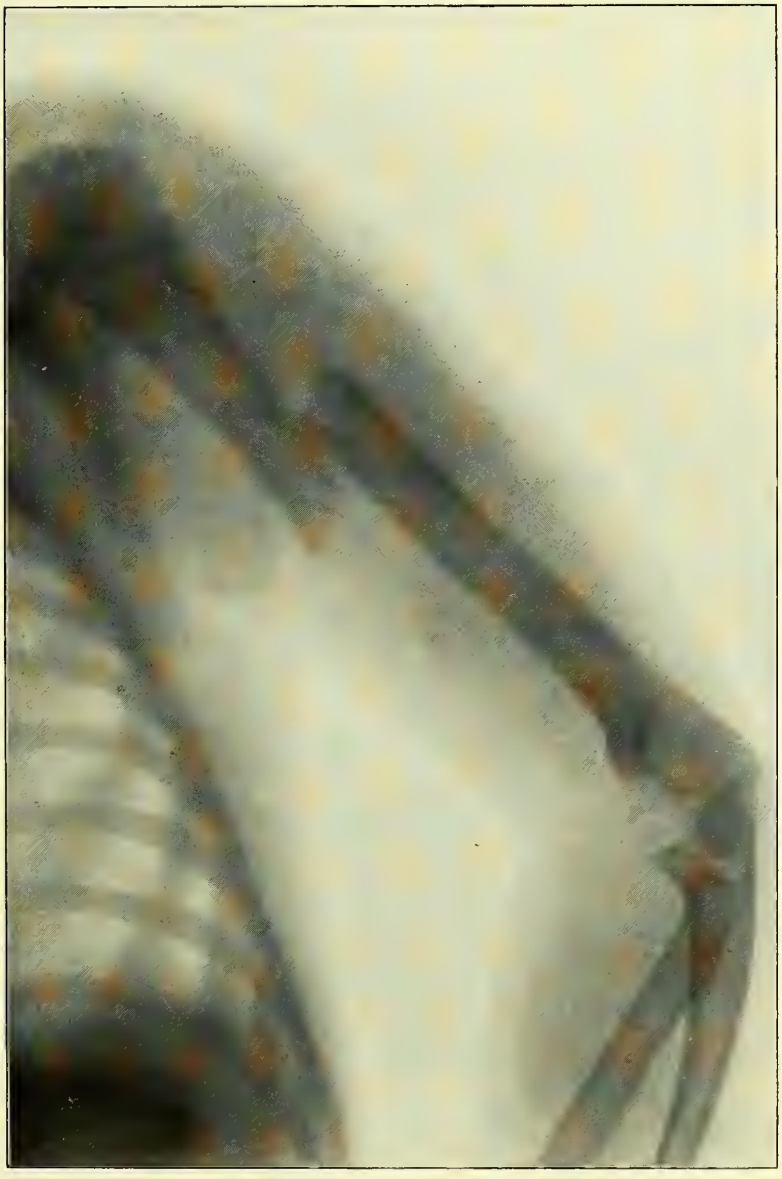
The upper fragment is drawn inwards by the muscles inserted around the bicipital groove, and the lower fragment is drawn upwards by the biceps and triceps, and outwards by the deltoid.

The arm is shortened, the ends of the bones can be felt projecting in the positions shown, crepitus can be elicited, and there is unnatural mobility of the limb.

Treatment.—Bandage the limb from the hand to above the elbow, to prevent subsequent œdema of these parts. Reduce the fracture by extension and apply an internal rectangular wooden splint, with externally a poroplastique shoulder cap, the lower end of which should extend down to near the elbow. If necessary apply, in addition to the above, short wooden splints to the upper arm. Bind the arm to the side.

Extension.—A. If the patient is able to go about, extension is obtained by slinging the limb from wrist only, when the weight of the limb is usually sufficient for our purpose.

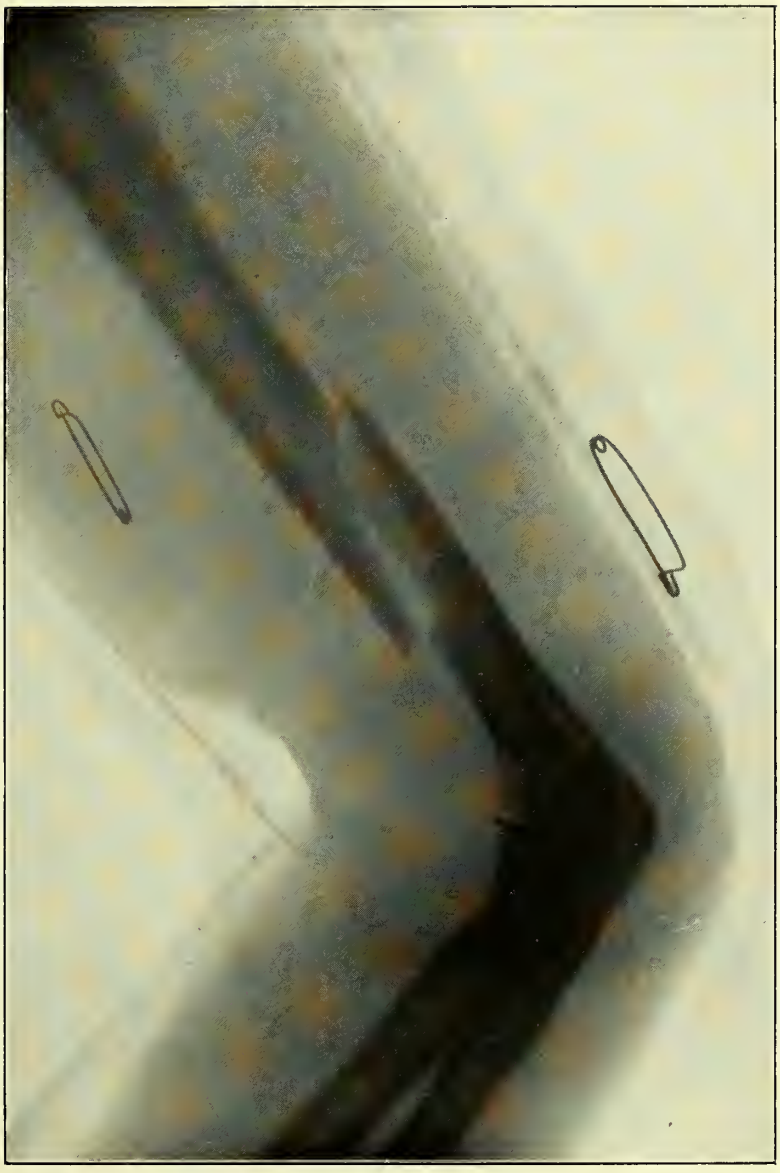
B. If the patient be confined to bed, fix the extension-apparatus to the lower fragment, counter-extension being made by means of a sling passed under the axilla and fixed to the head of the bed. Splints will require to be kept on for about 5 weeks.

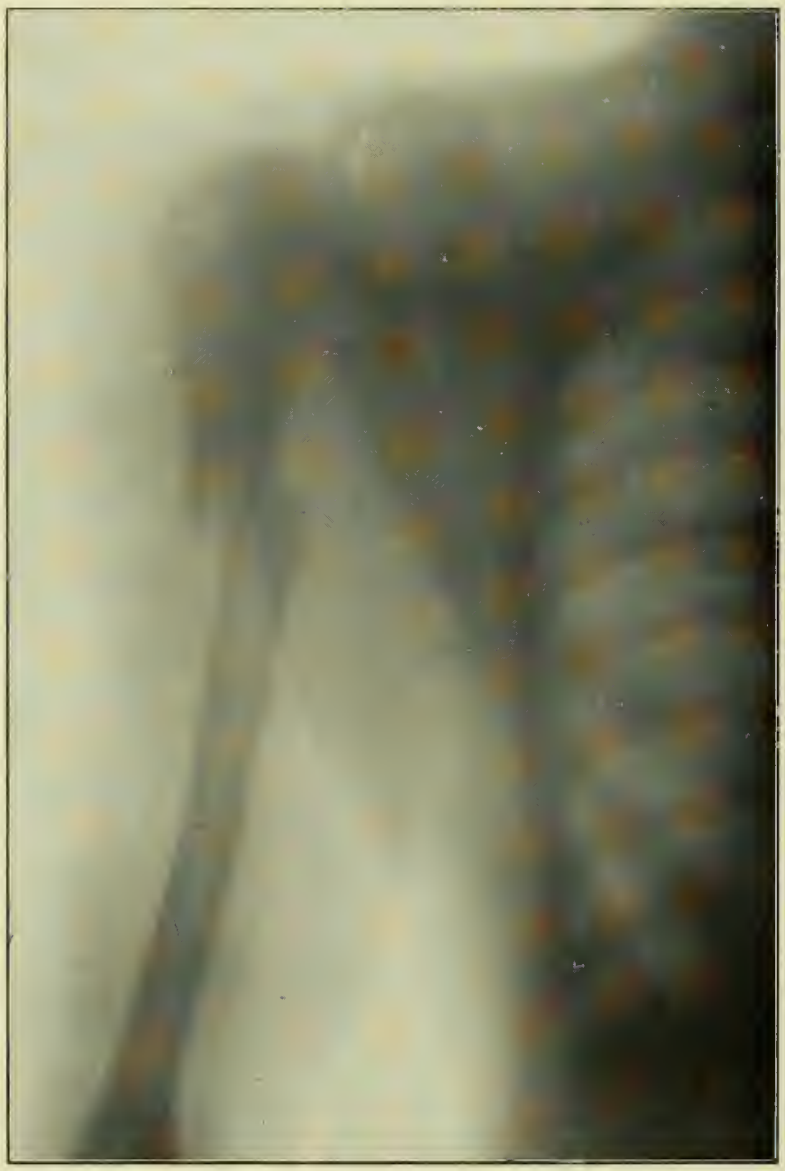


OBLIQUE FRACTURE OF THE SHAFT OF THE HUMERUS.

The skiagram shows slight displacement upwards, due to action of flexor and extensor muscles. Crepitus is well marked.

Treatment (See page 33).—Anterior and posterior rectangular splints for 4-5 weeks.





FRACTURE OF THE SURGICAL NECK OF THE HUMERUS.

In this case the lower fragment is displaced towards the axilla, and the upper fragment is displaced outwards and forwards by the muscles attached to the great tuberosity.

Treatment.—Treatment as at page 33, but in this case more depends on careful extension.

SUBCORACOID DISLOCATION AT THE SHOULDER JOINT.

Treatment.—Reduce by manipulation, failing which the method of extension with the surgeon's heel in the Axilla may be adopted. If of old standing, beware of employing too much force on account of the danger of rupturing the axillary vessels, or of producing a fracture of the neck of the humerus.

NORMAL FOOT.

SKIAGRAM of a normal foot, introduced for the purpose of comparison with the plates which follow.

FRACTURE OF THE ASTRAGALUS WITH DISLOCATION BACKWARDS OF PART OF THE BONE.

The skiagram shows part of the Astragalus displaced backwards and projecting under the skin above the Os-Calcis.

Treatment.—Excise the posterior fragment of the bone, using antiseptic precautions. Apply splints as on page 45.

COMMINUTED FRACTURE OF THE ASTRAGALUS.

DISLOCATIONS IN RHEUMATOID ARTHRITIS.

SKIAGRAM shows the feet of a patient suffering from marked Rheumatoid Arthritis.

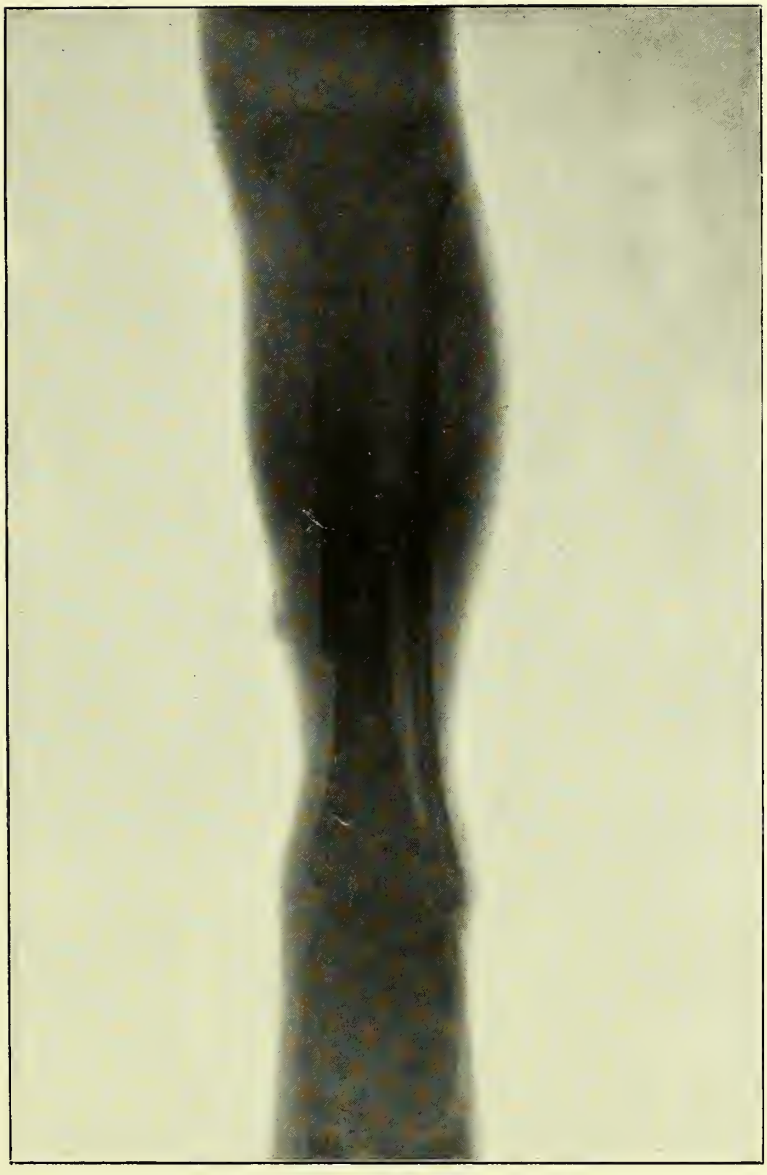
The phalanges and sesamoid bones of both great toes are dislocated. The effect in reducing the deformity by partial resection of the head of the first metatarsal bone is well shown in the right foot.

FRACTURE AND SEPARATION OF EPIPHYSIS IN A CHILD AGED 7 YEARS.

SKIAGRAM shows fracture at the lower end of the Fibula and separation of the lower Epiphysis of the Tibia. The foot is displaced backwards.

Treatment.—As for Pott's Fracture. (p. 45).

FRACTURE OF TIBIA IN A CHILD.



OBLIQUE FRACTURE OF TIBIA IN A CHILD.

The displacement is slight, this is usually the case when the Tibia alone is fractured and the Fibula remains intact.

On passing the finger down the Tibia, an irregularity could be felt in the outline of the bone, and on movement, there was distinct crepitus.

FRACTURE OF THE FIBULA.

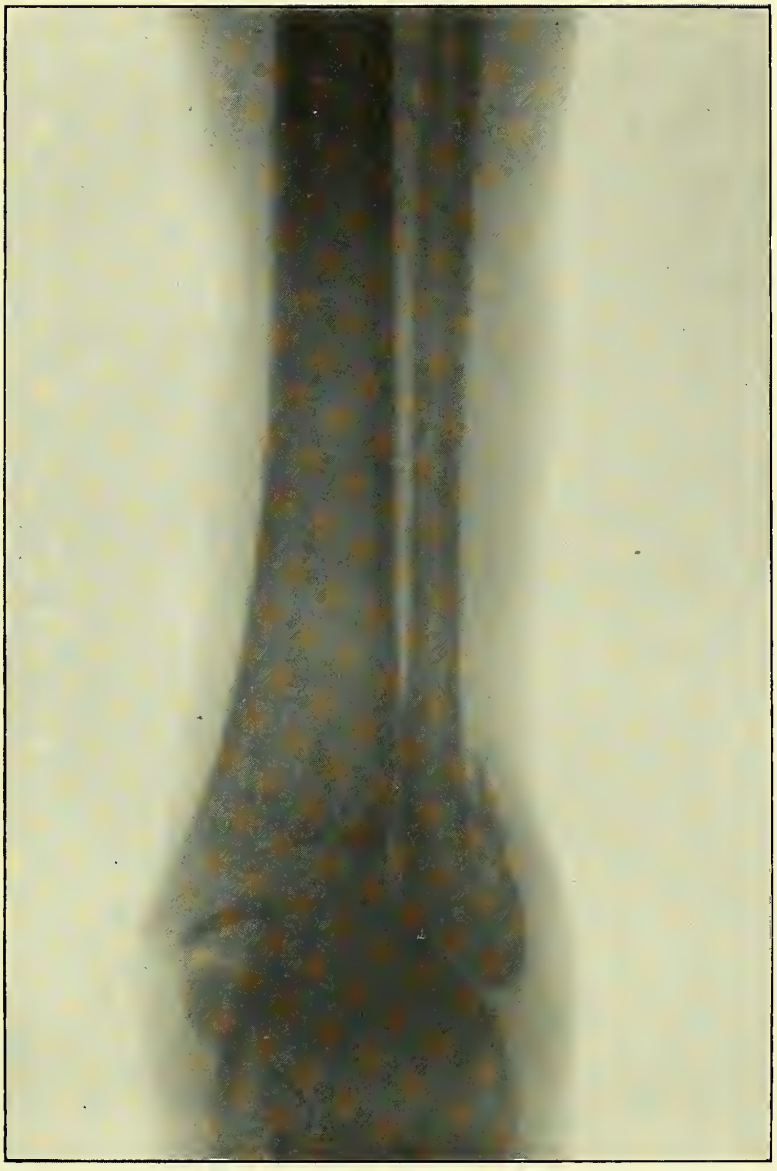
This shows fracture of lower end of Fibula with very slight displacement. The skiagram shows a lateral view of the limb.

Treatment.—Apply Plaster of Paris, to be kept on for 4 weeks, when massage may be commenced.

FRACTURE OF THE LOWER END OF THE FIBULA, WITH THE END OF THE INTERNAL MALLEOLUS TORN OFF. (POTT'S FRACTURE).

The foot in this case was displaced outwards and drawn slightly backwards by the Tendo Achillis.

Treatment.—Reduce the deformity by extension with the hands applied to the metatarsus and the heel; at the same time correcting the outward displacement. Plaster of Paris may be applied immediately, or in a few days, after the swelling of the soft parts has gone down, during which time lateral splints with foot-piece will be required. The patient may get about on crutches after the first week, and the apparatus dispensed with in 5-6 weeks, after which massage is to be employed. The position of the foot requires careful attention. (See page 50).



FRACTURE OF INTERNAL MALLEOLUS.

The skiagram shows the internal Malleolus detached, but there is no displacement of the foot; this contrasts with the previous plate of Pott's Fracture.

Treatment.—See preceding page.

OLD FRACTURE AT THE LOWER END OF THE TIBIA.

Skiagram shows unreduced backward displacement.

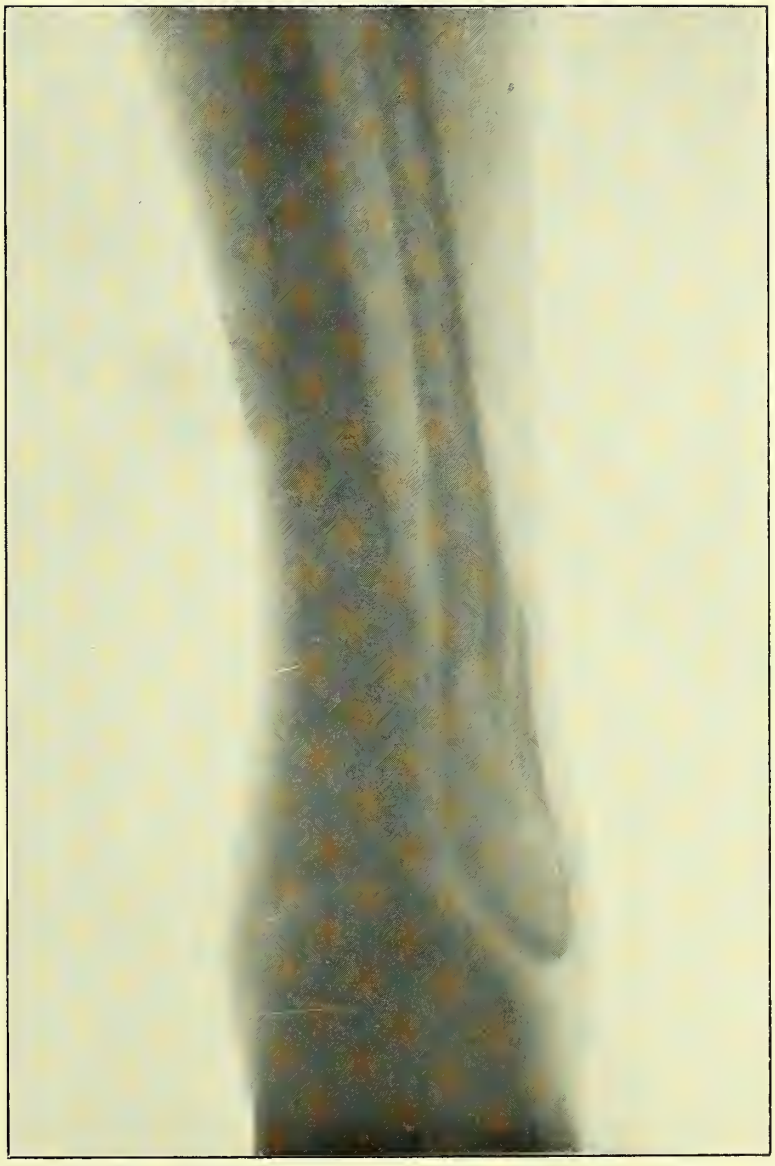
POTT'S FRACTURE.

SKIAGRAM shows a fracture of the lower end of the Fibula. This contrasts with No. 45 in that the lower tibio fibular-ligaments are more or less torn asunder, and the internal malleolus remains unbroken.

Treatment.—Apply a Dupuytren's splint if maintaining reduction by other means (p. 50) is difficult. Apparatus may be removed in from 5-6 weeks.

FRACTURE AT THE LOWER END OF THE FIBULA.

The skiagram was taken three weeks after the accident.



OBLIQUE FRACTURE OF BOTH BONES OF THE LEG.

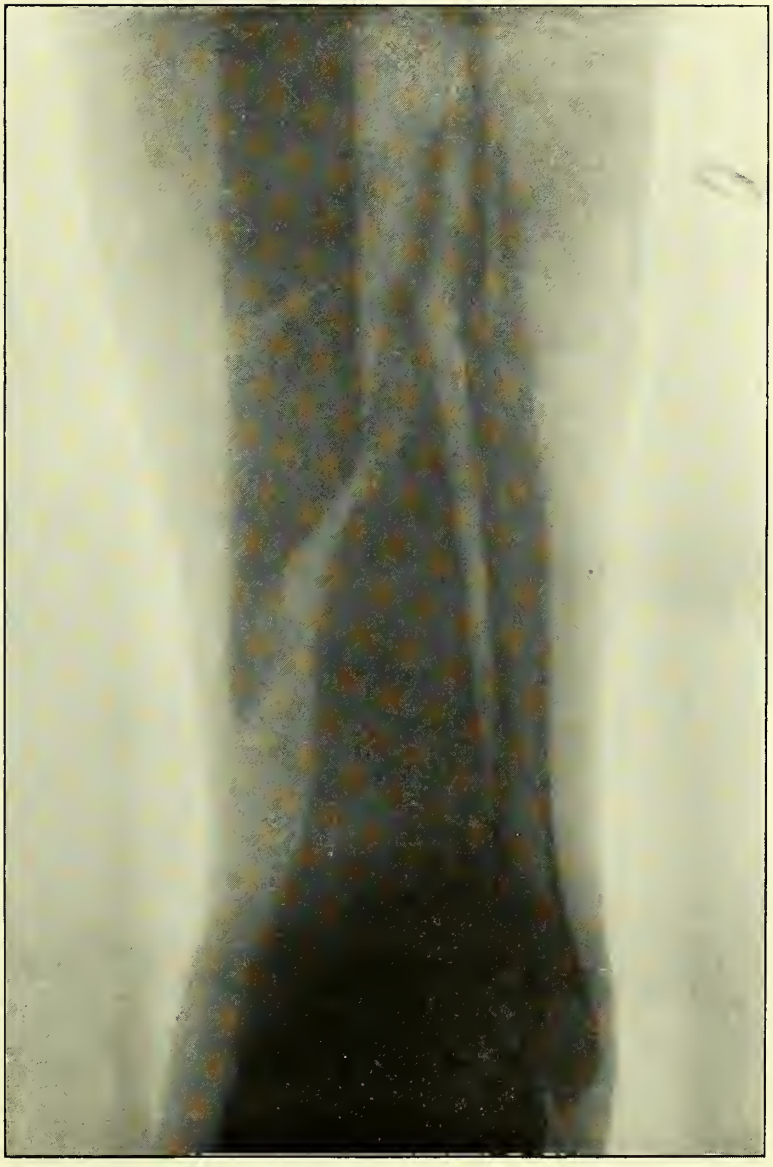
The skiagram shows an oblique fracture of both bones, and there is a fragment of the Fibula lying detached in the interosseous space. The sharp end of the upper fragment of the Tibia had almost pierced the skin.

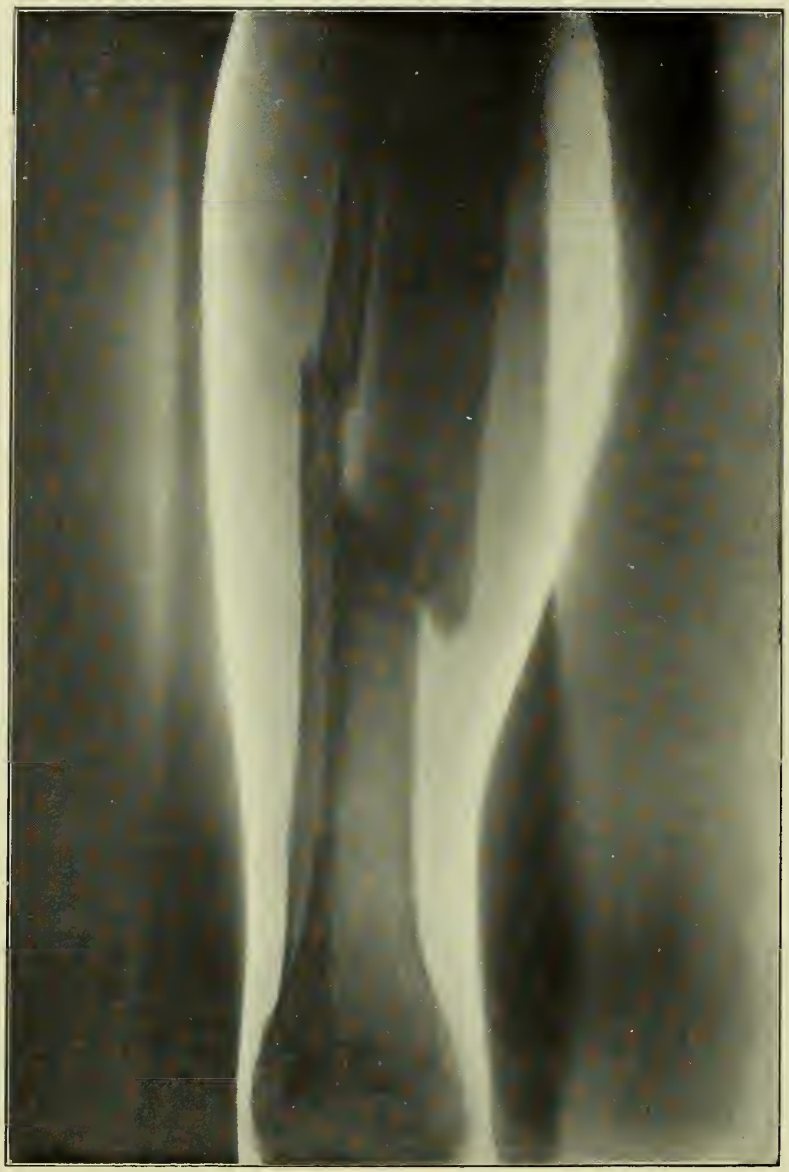
Treatment.—Reduce the fracture by extension and manipulation, and apply lateral splints (with footpiece). These splints must extend about a handsbreadth above the knee. If it can be obtained, a half-box splint supplemented by junk on the inner side of the leg makes a capital apparatus.

Care will be required to prevent falling backward of the foot. This can be obviated by the use of pillows, or better still by a Salter's cradle. In the course of 10 days or so the limb may be put up in Plaster of Paris, which should extend pretty well up on the thigh.

Attend to the following points in applying apparatus :—Avoid external rotation of the lower fragments. This is brought about by the weight of the foot. Avoid pointing of the toes, which will hinder the patient's walking, long after convalescence. This is met by seeing that the heel is applied to the footpiece, which should be vertical.

Splints to be left off in 5-6 weeks, and massage employed.

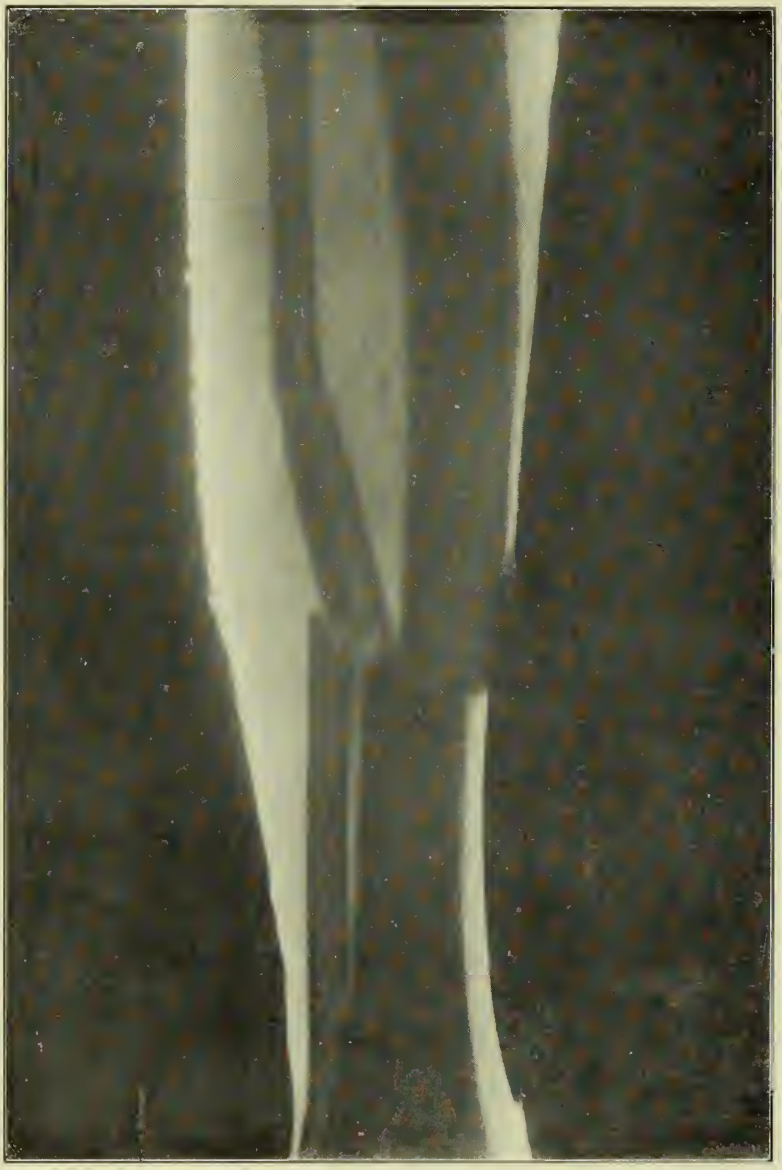




OBLIQUE FRACTURE OF THE TIBIA AND FIBULA, WITH LATERAL DISPLACEMENT.

The fracture was due to indirect violence, and the bones have given way at their weakest part. The lower fragments are drawn upwards, backwards, and outwards behind the upper fragments by the muscles of the calf, and the sharp end of the upper fragment of the Tibia projects forwards, so that great care is required in manipulation to prevent the fracture becoming compound.

Treatment.—As on p. 50.



FRACTURE OF BOTH BONES OF THE LEG, DUE TO DIRECT VIOLENCE.

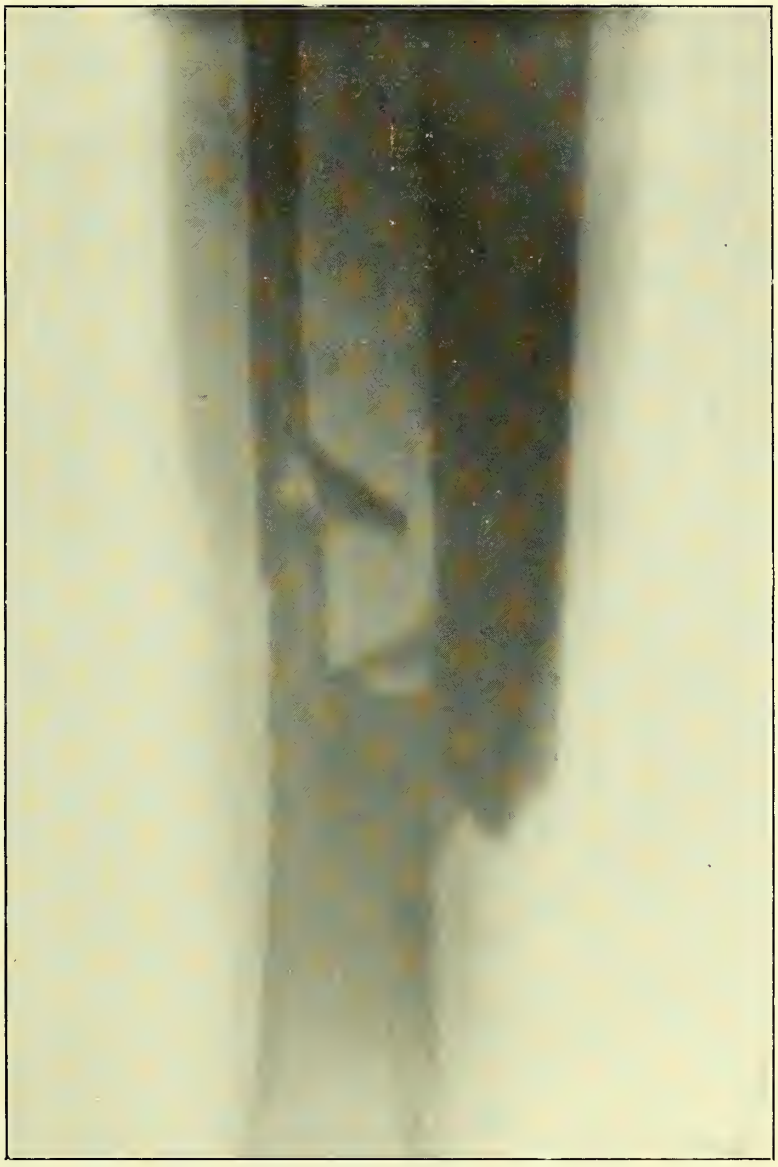
The skiagram shows both bones fractured transversely, but in addition there is another fracture of the fibula higher up. The bones have given way at the place where the injury was received.

Treatment.—As on p. 50.

MALUNITED FRACTURE OF BOTH BONES OF THE LEG.

The skiagram shows an old fracture of both Tibia and Fibula, in which union has taken place with great deformity. The injury was caused by a heavy weight falling against the leg while the patient was in the erect posture.

Treatment.—Nothing can be done here to remedy the shortening of the limb, but the deformity might be lessened by chiselling or sawing off the prominent end of the upper tibial fragment, and, having rawed the lower fragment, wiring the bone. It is questionable, however, if this would be necessary.



FRACTURE OF BOTH BONES OF THE LEG.

The skiagram shows a fracture in the upper part of Tibia and Fibula. The fracture has united, but there is very marked displacement with rotation and shortening.

Treatment.—Remarks on p. 53 apply here.

TRANSVERSE FRACTURE OF THE PATELLA FROM INDIRECT VIOLENCE.

SKIAGRAM shows a lateral view of the fractured Patella taken a few hours after the accident occurred.

Treatment.—Like fracture of the olecranon this injury may be treated in one of two methods :—(1) By external apparatus ; (2) wiring the fragments.

(1) By *external apparatus* we aim at approximating the fragments by means of external strapping or by Malgaigne's hooks. As a preliminary the joint must be aspirated, and the limb is then put up on a backsplint which rises towards the foot, making an angle of 45 degrees with the horizontal. The patient must be propped up in bed to flex the hip joint, and so relax the quadriceps muscle. This method is unsatisfactory, as the treatment must be prolonged. The resulting union is one by fibrous tissue, and the limb is weakened permanently.

(2) *Wiring the fragments.*—Expose the seat of fracture by a flap. Drill the fragments and fix them together with silver wire, having previously removed any clots from the interior of the joint and any pieces of fibrous tissue (periosteum, capsule, etc.) which may have got in between the fractured surfaces. Apply a posterior splint for a week or ten days. Bony union is obtained, and the method is speedy, the patient walking in from 5-6 weeks' time.

FRACTURE OF THE LOWER END OF THE FEMUR.

The fracture is somewhat oblique and the displacement very typical. The gastrocnemius pulls the lower fragment backwards towards the popliteal space and the upper fragment projects forwards. There is shortening of the thigh with undue mobility, and the ends of the fragments can be felt by the surgeon. On reducing, crepitus is obtained.

Treatment.—Flex the knee and reduce by extension on the lower fragment applied to the hollow of the joint. When reduction has been brought about extend the knee. Should the displacement then recur the limb must be put up on a double inclined splint. Should the displacement remain reduced in the extended position of the knee, fix the thigh with short splints buckled on, and apply a long splint.

In either case extension-apparatus is to be applied to the lower fragment. This apparatus consists of strapping buckled to a wooden stirrup from which a weight passes over a pulley at the foot of the bed. Counter-extension is obtained from the weight of the patient's body, the foot of the bed being raised on blocks.

In some cases tenotomy of the tendo Achillis may be found necessary.

FRACTURE OF THE SHAFT OF THE FEMUR IN A CHILD.

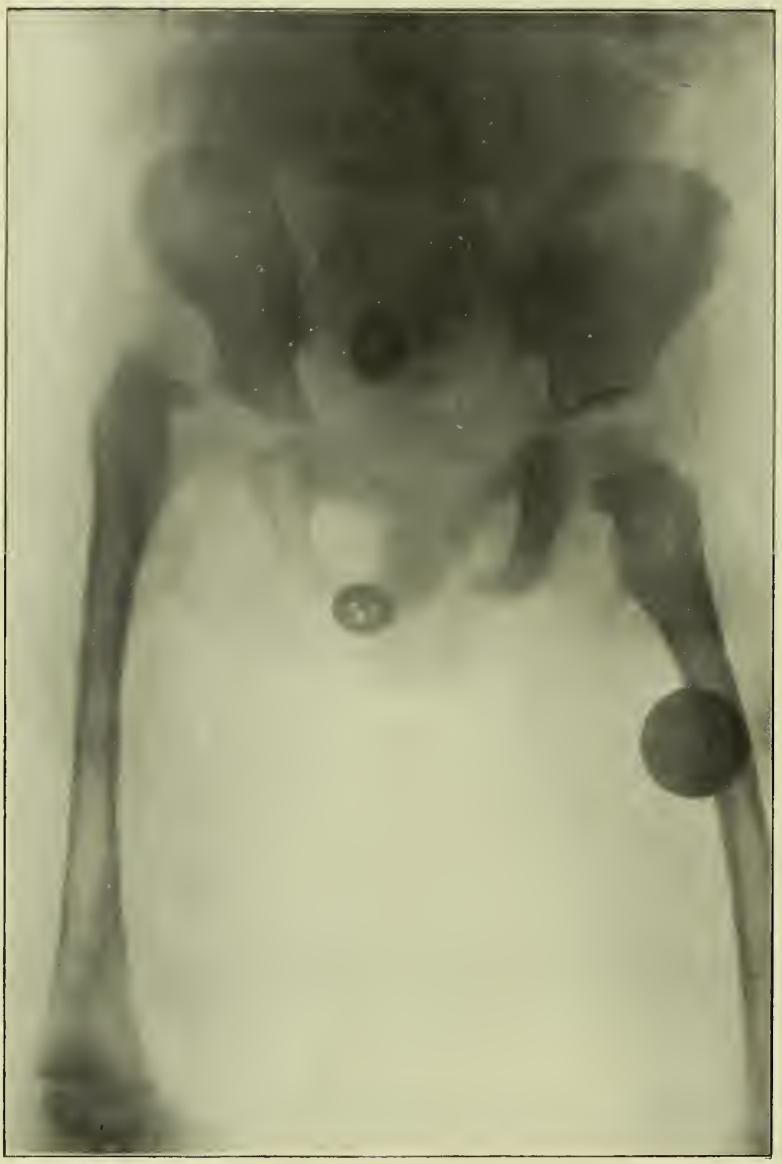
The skiagram shows splitting of the upper fragment, with displacement backwards of one of the pieces

Treatment.—Hamilton's splint.

IMPACTED FRACTURE OF THE NECK OF THE FEMUR (EXTRA-CAPSULAR) IN AN ADULT.

The neck of the bone is driven into the cancellous tissue of the trochanter.

Treatment.—Keep the part at rest by means of a long splint. Extension must not be made in case of loosening the impaction. Allow the patient to go about on crutches when pain and swelling have subsided.



UPWARD DISLOCATION OF THE LEFT FEMUR IN A CHILD.

The skiagram was taken with the child's clothes on, the buttons of the trousers are shown and a halfpenny in the right trouser pocket. On comparing the two sides, the deformity can be easily made out, the head of the femur lying on the dorsum ilii just above the lip of the acetabulum.

Treatment.—If recent, manipulation should be employed, and will probably be successful. If of old standing, say from two or three months onwards, the treatment varies with each case :—

1. If deformity and impaired movement do not hinder the patient from getting about, the condition is best left alone.

2. Reduction may be effected by opening the parts, dividing resisting soft structures, and replacing the head of the bone in the acetabulum.

3. It may be found necessary to excise the head of the bone.

4. Should ankylosis have occurred osteotomy of the neck of the bone may be performed.

OLD FRACTURE OF SHAFT OF FEMUR.

The fragments have been wired, but no union has taken place.

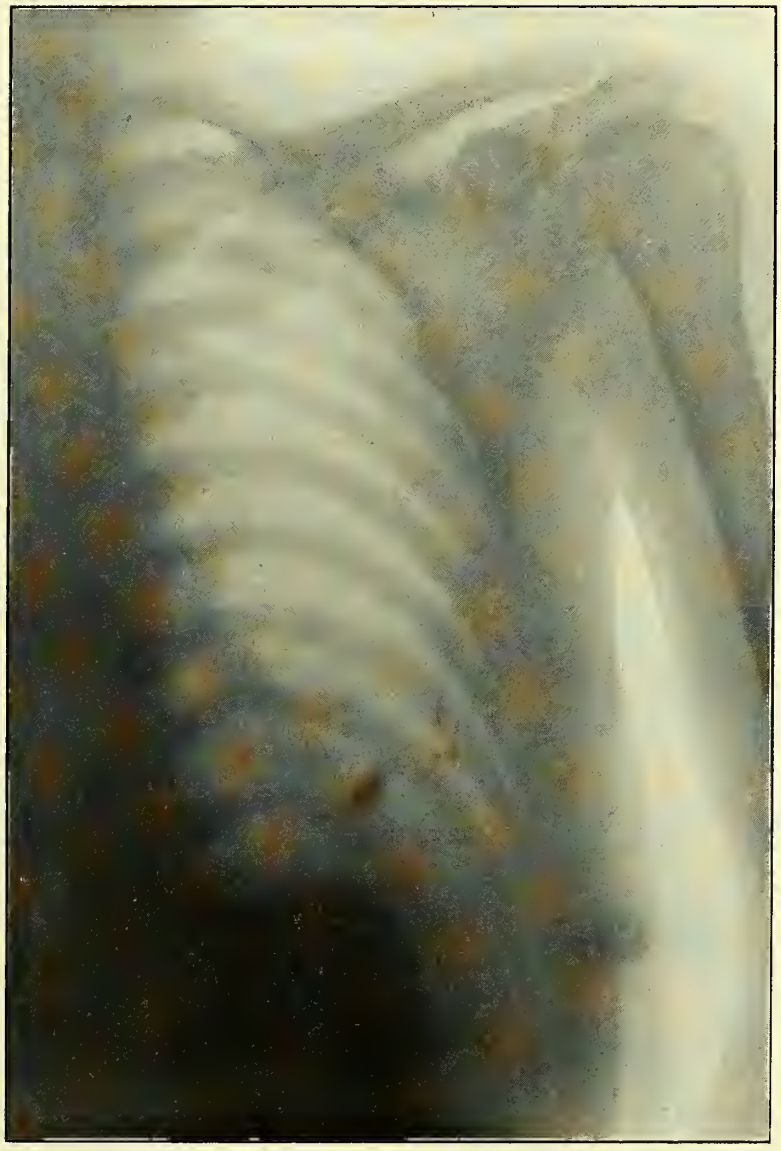
SKIAGRAM SHOWING A MARKED EXAMPLE OF COXA VARA.

This depends as a rule on Rickets, but it may be due to an inflammatory process in the neck of the femur.

Treatment.—If rachitic, adopt general treatment. Riding exercise has been recommended to overcome the excessive adduction. If necessary, recourse may be had to osteotomy (linear or cuneiform) at the base of the neck of the femur.

SKIAGRAM SHOWING BULLET IN THE CHEST AT THE LEVEL OF THE 9TH INTERSPACE.

Treatment.—If the bullet gives rise to troublesome symptoms, the parts must be freely opened up, and hæmorrhage, if any, staunched. Should the lung have been wounded and contain the missile, follow the track and extract the foreign body, afterwards inserting a gauze plug into the viscus. The plug is changed daily, and lessened in size. In the absence of symptoms do not try to extract.



SKIAGRAM SHOWING A TUBERCULOUS CAVITY IN THE HUMERUS OF A CHILD AGED 5 YEARS.

Treatment.—Gouge or scrape out the diseased portion of the bone Pack the cavity with Iodoform gauze and allow it to granulate. Operator must be careful to avoid injuring the Ulnar or the Musculo-spiral nerve.

SARCOMA OF THE HUMERUS.

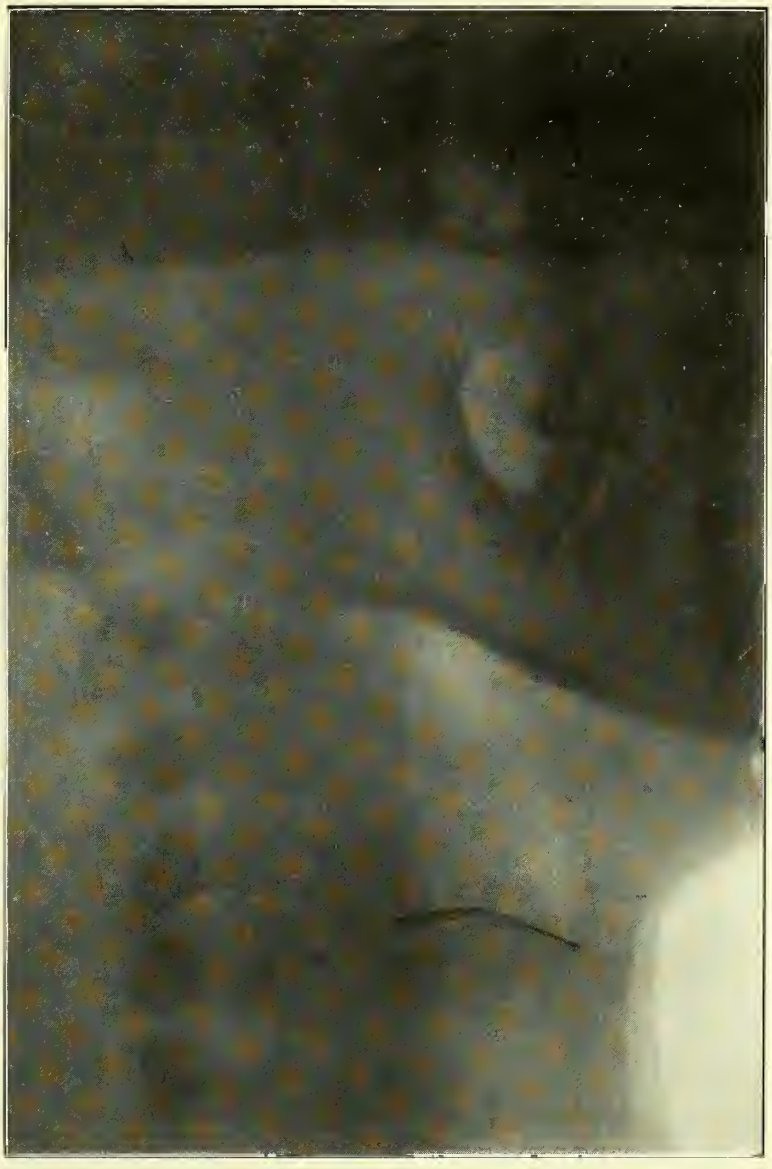
The skiagram shows a fracture through the Sarcomatous mass. As there is no displacement, the line of fracture is not well marked, but crepitation could be distinctly made out, and on close examination of the plate a faint, irregular line can be seen passing obliquely through the mass.

SKIAGRAM SHOWING A NEEDLE IN THE SOLE OF THE FOOT.

FOREIGN BODY (PIN) IN THE LARYNX.

The skiagram shows the side of the neck.

The pin, which is bent downwards at its middle, has its point embedded in the intervertebral disc between the 4th and 5th cervical vertebræ. A skiagram taken from the front showed the foreign body to be in the middle line, and it was found at the operation to be in the cavity of the larynx.



SKIAGRAM OF THE HAND, SHOWING TUMOUR BETWEEN THE FIRST AND SECOND FINGERS.

The tumour is evidently connected with the second metacarpal bone, and its growth has resulted in deformity of the third.

Treatment.—Excision of the metacarpal bone from which the tumour springs (*i.e.*, if the usefulness of the hand be much impaired).

SKIAGRAM OF THE HAND.

SHOWING needle on palmar surface of carpal bones.

SKIAGRAM OF THE HAND, SHOWING SUPERNUMERARY PHALANGES OF THE THUMB.

Treatment.—If removal of the supernumerary structures be determined on, it may be carried out, small flaps being made. Not unfrequently a single joint-cavity is common to both regular and supernumerary phalanges, and unless care be exercised in the removal, the operation may leave the patient with a stiff joint.

MALFORMED HAND OF A BOY AGED 5 YEARS.

The index and little finger were apparently absent. The breadth of the medius was suggestive of a fusion. The ring finger was stouter than its fellow on the opposite hand. Each digit had one metacarpal bone. The thumb was apparently normal.

(*Note.*—The above was noted by Dr. Edington before the skiagram was taken.)

The Skiagram shews the broad metacarpal of the mediue finger with double epiphysis. The phalanges are slightly broader than normal. The bones of the ring finger are not so markedly broadened. The carpus shews centres of ossification in the Os Magnum and Unciform bone.

RIGHT HAND: ABSENCE OF LITTLE FINGER.

The subject worked as chief engineer on a steamer, and had good use of the part.

No pisiform was felt, but a tendon corresponding to that of the flexor carpi ulnaris could be made out. The extensor carpi ulnaris tendon was not in its usual situation, but ran in a groove between the radius and ulna to the base of the 4th Metacarpal bone. This bone articulated with a prominent unciform. The grip was weaker than in the left hand. (The above note was taken by Dr. Edington before the part was skiagraphed).

Cuneiform and pisiform bones are absent; semilunar projects further than normal towards ulna. Unciform is represented.

KNITTING NEEDLE IN THE SOLE OF THE FOOT.

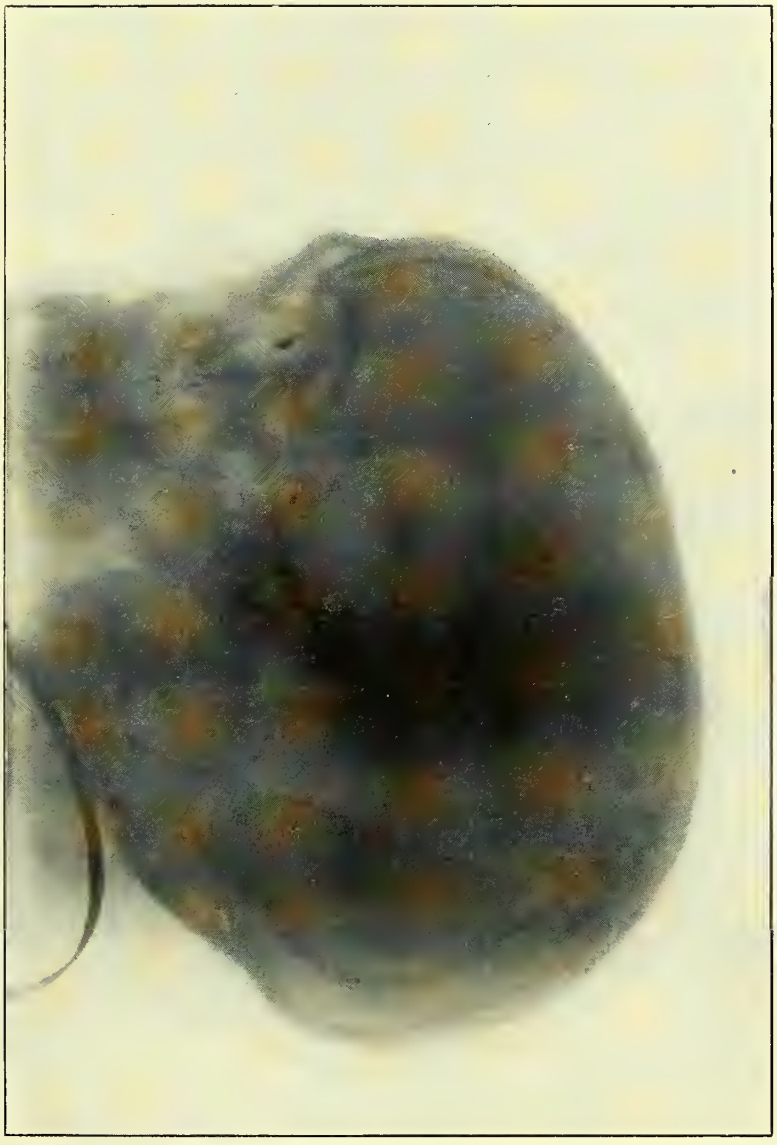
The needle entered between the toes and was lying close to the plantar surface of the bones. It had been broken after entering the foot.

SUPERNUMERARY PHALANGES OF GREAT TOE OF LEFT FOOT.

SKIAGRAM shows that the supernumerary phalanges are attached only to the soft tissues of the foot. There is also displacement inwards of the whole great toe.

Treatment.—Remove the supernumerary phalanges, and by subcutaneous section, if necessary, of soft parts, overcome abduction of the metatarsal bone and toe.

PIECE OF METAL IN EYEBALL.



COIN IMPACTED IN GULLET.

The accompanying skiagraph is of a child, aged eleven, who took a penny from her sister with whom she was playing, and attempted to conceal it by placing it in her mouth. It, however, suddenly "went over." She at once complained of severe pain on the right side of the neck, which was increased by attempts at swallowing, also severe pain at the level of the second tracheal ring. The skiagram clearly indicates the position of the coin, which was removed immediately afterwards by means of the coin catcher.

FRACTURE OF BOTH BONES OF THE LEG.

This patient was injured at sea, and did not consult a surgeon until six weeks after the accident. The lower end of the upper fragment of the Tibia is projecting forwards nearly through the skin, and the Fibula is fractured higher up.

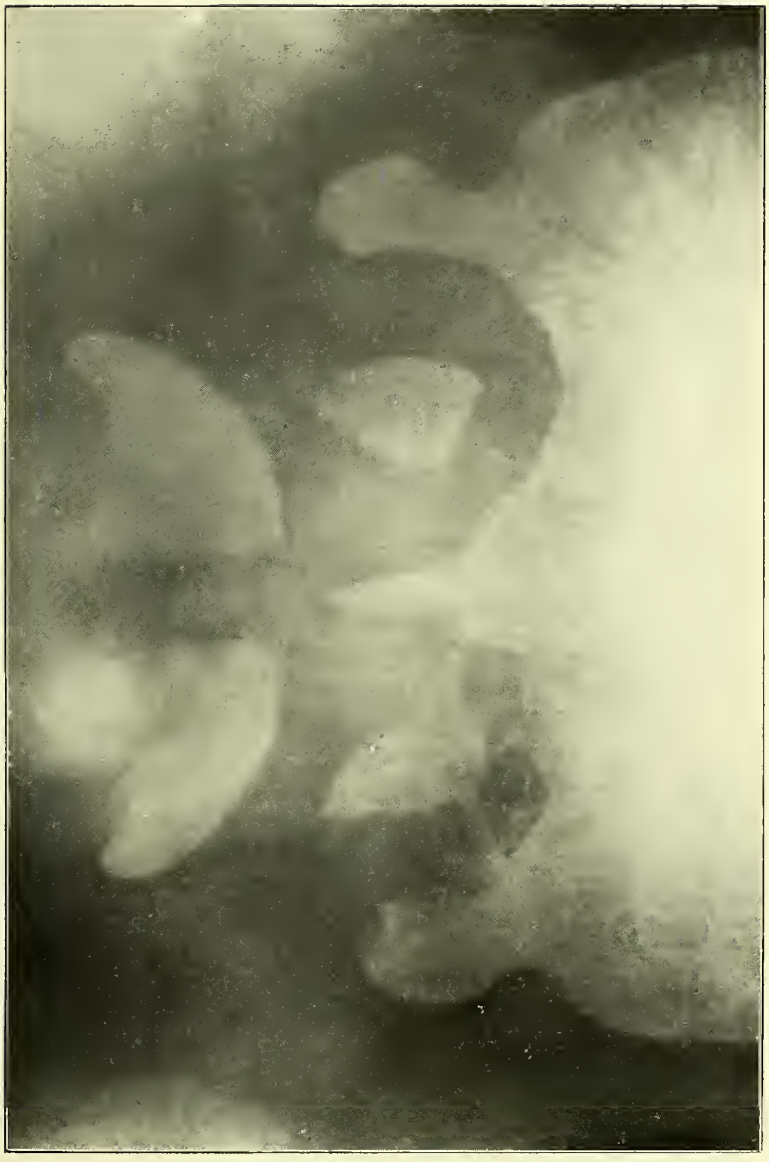
FRACTURE OF FIBULA, DUE TO DIRECT VIOLENCE.

The skiagram shows marked displacement of lower fragment.

FRACTURE OF PELVIS.

The skiagram shows fracture of the tuber ischii, the lower part of the bone having been driven upwards, and the end of the fragment projecting outwards below the neck of the femur. The ramus of the ischium and the lower ramus and part of the body of the os pubis have also been fractured and appear as two fragments. There are thus seen from behind forwards three fragments:—(1) Tuber ischii, (2) Conjoined ischial and pubic rami, (3) Lower part of the body of the os pubis.

The patient, aged 40, sustained a fall from a horse three years previously. He came down on the tuber ischii, and was allowed to walk after three weeks. He still limps, and complains of pain in the distribution of the great sciatic nerve. There is no impairment of mobility at the hip joint.



PULMONARY OSTEO ARTHROPATHY.

HANDS of a child aged five years, the subject of Bronchiectasis.

PULMONARY OSTEO ARTHROPATHY.

FEET from the same case as previous plate.